INTERFACE: CONNECTING THE WORK OF GREGORY BATESON, DELEUZE AND GUATTARI, AND ALAIN BADIOU

by

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SUPERVISORY COMMITTEE APPROVAL

of a thesis submitted by

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This thesis has been read by each member of the following supervisory committee and by majority vote has been found to be satisfactory.

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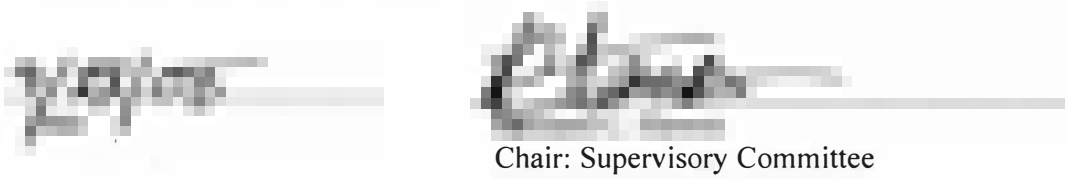

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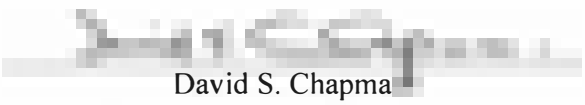

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ABSTRACT

My thesis derives its impetus and its structure from the work and thought of Gregory Bateson. My aim is to demonstrate the ongoing vitality of his ecology of Mind by tracing the connections between his work and that of Gilles Deleuze, Félix Guattari, and Alain Badiou.

Part I represents a broad overview of Bateson's major works, emphasizing his theories of abduction and recursivity as critical philosophical concepts. Bateson's notion of abduction as a third investigatory methodology suggests a means for connecting his work to that of other theorists. A pioneer of cybernetics, his probing of the recursive role of information feedback and of the pragmatic interface between organisms and their environment can be read as a meta-model for a multiperspectival approach to environmental issues and texts.

Part II explores the differences and the reiterative similarities in the work of Bateson, the French writing team of Félix Guattari and Gilles Deleuze, and contemporary French philosopher Alain Badiou. Using mathematical notation as metaphoric semiotics, I argue that a theoretical multiplicity moves rhizomatically between and across the very permeable boundaries that may be drawn between these theorists, and that the emerging connections describe a pregnant holism.

Part III moves to employ the insights of this theoretical analysis in a more pragmatic application of these shared insights and concerns. In a recent journal article,

Dr. Robert Cox urged the environmental communication community to define itself as a crisis discipline. Bateson's vision for ecological holism was predicated on respecting the dangers inherent in ad hoc intervention in systems whose interconnectivity may be little perceived when defined in causal and linear terms. The dangers of rhetorically limiting the semantics of environmental communication to a heuristic rather than a holistic approach are further explored using the work of Deleuze, Guattari and Badiou. This section provides a discursive and diacritical response to Dr. Cox's proposals.

My thesis concludes with the recognition of the depth of Gregory Bateson's vision and of the contemporaneity still vibrant in his perspectives. Bateson is in many ways the exemplar of an environmental humanities scholar, and I weave that thread into my concluding remarks.

TABLE OF CONTENTS

ACKNOWLEDGMENTS

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Finally, I should thank the fledgling program in Environmental Humanities and my fellow candidates for helping to grow a space where an interface of this nature might be conceived and where inquisitive and interdisciplinary scholarship might be encouraged to play. Your support and encouragement has been and will continue to be greatly appreciated.

INTRODUCTION: OLD MYSTERIES, NEW CHALLENGES

In the introduction to what was to have been her father's final book, Angels Fear: Towards an Epistemology of the Sacred, editor Mary Catherine Bateson includes a section from Gregory Bateson's notes for the text subtitled *Defining the Task*. There he proposes to "begin the task of making the new challenges perceptible to the reader and perhaps to give some definition to the new problems" which he saw as emerging in the postatomic age (Angels Fear 14). My own task is much the same; I intend not to rehabilitate Gregory Bateson's thought so much as to extend it, to pursue its cybernetic connections and abstractive leaps into the texts of other thinkers whose efforts either explicitly or implicitly resonate with his. I find in Bateson's thought a renewable resource, an alternative perspective best described not as some quantity of sedimented theory which remains to be extracted, but rather as a circulating energy, a perspective that reinvents and reinvests itself as it is re-encountered and re-engaged. My work is intended as neither definition nor as description, but as a beginning-again, a reverberation grounded in an interface that, like a rhizome, has neither beginning nor end but rather arises in the middle of a cybernetic interface between Gregory Bateson AND Gilles Deleuze and Félix Guattari AND Alain Badiou.

Bateson did much to provide a vital and vibrant argument regarding man's relationship with his environment, with his fellow men, and with his inner self. In his foreward to Bateson's third book, Mind and Nature, Sergio Manghi writes:

> The "ecological" language created by Bateson, in particular starting in the 1960s, has to be considered one of the most important attempts of the 20th century to rethink the human condition in the planetary era. It was, in other words, an attempt to explore in depth our being part of larger systems—interpersonal, social, and natural—engaged in an impetuous unification of humanity and a growing mystical faith in technology's power of salvation." (x)

That Bateson's work was well-received at the time it was published is evident from the number of his contemporaries, particularly environmental writers, who seized upon his notions of holistic systems and connective patterns of behavior and referenced them in their work. Yet surprisingly, his work is little read today, and then rarely applied beyond the disciplines with which he is most often identified, whether anthropology, psychology, cybernetics, or environmental studies. That his ideas demand to be reconsidered is one of his own injunctions to his readers—that those same ideas deserve to be reexamined and might usefully and provocatively be reapplied in a multiplicity of circumstances is my own argument.

To that end, my thesis will investigate Gregory Bateson's body of work for significant concepts that might extend beyond his own circumstances and which would inform a twenty-first century environmental situation. Presented in the same organizational framework as his Steps to an Ecology of Mind, Part I will focus on Bateson's published and unpublished work and on the foundational concepts which circulate throughout his texts. Ranging over an intellectual lifespan of some forty-five years, Bateson's essays, interviews, correspondence and published books reveal an evolutionary growth in an epistemology that continually renews and critiques itself while pursuing both a rigorous and yet creatively imaginative vision that he would ultimately call the cybernetic Mind. Moving chronologically and yet reiteratively through his body

of work, some key concepts serve to underscore Bateson's interest in patterns and in connections, and to that end I focus especially on his notions of abduction and recursiveness, allowing their interplay to provide a multiple perspective on each of his texts. Double description is another of Bateson's favorite methodologies; recognizing in one of his rare poems that "if you read between the lines/You will find nothing there," Bateson constantly seeks not *things* but those *relationships* that resonate between them as the source of meaning and magic in the ecology of mind (Angels Fear 5). That there are relationships and repetitions, as well as differences, between and among his essays also serves to forward his interest in the ways that immanent mental process suggests a unifying potential that can defeat the reification of difference codified in Cartesian duality and reinscribed by purposive consciousness. Such immanence cannot be embodied within a single human mind or a discretely human being, but must instead be metaphorically understood as an extended and dynamic system, which Bateson expresses as cybernetic Mind.

This sets up the movement in Part II towards the intersections of Bateson's ideas in cybernetic resonance with those of other writers, particularly the work of Gilles Deleuze and Félix Guattari as it builds on explicit connections to Bateson's epistemology. Using mathematical sign as both a connective and as a figural device, Part II probes the manifest connections between Deleuze and Guattari's materialist ontology and Bateson's cybernetic epistemology, while also opening up a wider field of inquiry through this same device. Deleuze and Guattari's work together, and particularly Guattari's solo works, both explicitly and implicitly bear the imprint of Bateson's thought, and investigating the patterns that connect them yields a deeper appreciation of

each. Deleuze and Guattari also move Bateson's thought forward, adapting and mutating his thematics into rhizomatic pathways beyond his conceptual structure and producing not only revolutionary but co-evolutionary constructions. Their work also serves as a bridge between Bateson's thought at his death in the twentieth century to the contemporary and more-than-modern work of twenty-first century French philosopher Alain Badiou.

Badiou's work, grounded in mathematical semiotics and concerned with truth and with the subjects it induces, provides a fertile ground for making the kinds of abductive connections that Bateson advocates. Badiou founds much of his ontology in specific situations, an intellectually and spatially appropriate interstice that figures the overlap of the materialist concerns of Deleuze and Guattari with the ecological language of Bateson. Badiou's philosophy is presented in the language and notation of set theory, which acknowledges the early work of Bertrand Russell, so critical to Bateson's early epistemology, yet moves beyond it even as set theory has evolved to resolve some of the constraints that the earlier incarnation created for Bateson; the resulting connections between Bateson AND Deleuze and Guattari AND Badiou provide the step to yet another plateau of inquiry.

In Part III, the founding essay for the newly launched journal, Environmental Communication, is deconstructed through the multiple perspectives of Bateson, Deleuze, Guattari, and Badiou, in order to demonstrate the vitality and the integrity of their respective minds conjoined as one while problematizing the disciplinary and ethical vision promulgated by author Robert Cox. Nothing could better illustrate the ongoing vibrancy and value of Gregory Bateson's practice and process than to utilize it in a

contemporary critique; to test the accuracy of these proposals by recursively feeding them back through a Bateson-Deleuze-Guattari-Badiou machine is to productively challenge Cox's ideas and to test them for survival in an ecology of mind that is as elegantly alive today as it was when Bateson first proposed it in 1971.

I conclude by considering how this shared vision might also inform a multidisciplinary and multivocal program such as the University of Utah's master's degree program in Environmental Humanities. Both Bateson and Guattari are concerned with integration rather than specialization, and the interplay between their points of view informs the kinds of intellectual diversity that an interdisciplinary and transdisciplinary program must advocate. Guattari, never at a loss for adapting languages (whether major or minor, written or spoken, digital or analogous) to serve his purposes, describes a "concrete machine" as that which "traverses different domains…capable not of integrating but of articulating singularities of the field under consideration to join absolutely heterogeneous components" (Chaosophy 40). Bateson would articulate this as the cybernetic Mind's ability to locate meaning in noise, the source of all new ideas. For Environmental Humanities to survive as an ecology of ideas, that access to the plenitude of the void within its situation must be privileged and protected.

Further than that, as Bateson wrote in his introductory notes for Angels Fear, I do not expect to go. My hope is to craft an argument that promotes a further discussion of Gregory Bateson's prolific epistemology by recursively examining his ecology of ideas and by exposing his concerns to the postmodern critical theorists of our present situation. To do so is to embrace my own immersion in that ecology of mind that is BATESON + DELEUZE + GUATTARI + BADIOU.

PART I: AND YET THE BEAUTIFUL PERSISTS

Gregory Bateson's first published book appeared in 1936. Naven is an anthropological treatise, the result of Bateson's field work among the head-hunting Iatmul of New Guinea.[1] Classically educated in Great Britain, Bateson began his academic career in biology, following in the footsteps of his father, the distinguished biologist and genetics advocate William Bateson,[2] but soon shifted to the newly-emerging social science of anthropology, which he hoped would "supply the personal inspiration which I believe myself to need, and indeed hope always to need" (Lipset 115). It is that same need which would ultimately propel Bateson forward through a changing series of disciplinary affiliations; over the course of his professional and academic life, he would also find inspiration in the fields of cybernetics and communications theory, psychiatric studies, cetacean and mammalian communication, and in the relationships of all these fields to individual, social, and natural ecologies. In 1958, a second edition of Naven was published which included a second epilogue by Bateson. In his "Preface to the Second Edition," Bateson states that this second epilogue was dictated by his need to reevaluate his original investigative conclusions in light of the multifaceted constellation of knowledge his intellectual journey had exposed. His comment that "we now have the beginnings of a general theory of process and change, adaptation and pathology…and, in terms of the general theory, we have to reexamine all that we thought we knew about organisms, societies, families, personal relationships, ecological systems, servo-

mechanisms, and the like" is an elegant nod to the work which would occupy him for the next decade.

In 1971's Steps to an Ecology of Mind, Bateson presented a collection of his essays and lectures that demonstrated his ongoing reevaluation of his thought in what he identified as four main subject areas: "anthropology, psychiatry, biological evolution and genetics, and the new epistemology which comes out of systems theory and ecology" (Steps "Foreword, 1971" xxii). His ordering mirrors his own interest in Bertrand Russell's Theory of Logical Types,[3] a philosophical/logical argument that Bateson used extensively in his early investigations of sequential orders or degrees of logical abstraction in human thought and communication patterns. He divides this book first into sections, arranged by thematic or disciplinary homogeneity, in an order that corresponds to the sequence in which his disciplinary affiliations progressed. Within each section, the essays and lectures are arranged chronologically, from his earliest investigations to those most recently considered. Critically, Bateson comments that he expects most readers to confine themselves to their own area of interest and that consequently he has not edited out repetition across the sections, but it is here that his particular stylistic gift reveals itself. It is that repetition which is of utmost consequence to Bateson's critical theory, a redundancy that he will more specifically develop into the concepts of abduction and recursivity, key elements of his third book, Mind and Nature.

Mind and Nature: A Necessary Unity was first published in 1979. Seriously ill with lung cancer, the seventy-five year old Bateson was able to complete this book only with the help of his daughter, Mary Catherine Bateson, and its publication barely predated his death in July, 1980. In this book, Bateson hoped to forward his new kind of

science, the "ecology of mind" he concluded with in Steps, by making explicit the implicit linkages he had begun to forge connecting cybernetics and evolution, relating information to difference, and conflating mind with nature. In his Introduction to Steps, he stated:

> My belief that such matters as the bilateral symmetry of an animal, the patterned arrangement of leaves in a plant, the escalation of an armaments race, the processes of courtship, the nature of play, the grammar of a sentence, the mystery of biological evolution, and the contemporary crises in man's relationship to his environment, can only be understood in terms of such an ecology of ideas as I propose." (Steps xxiii)

In Mind and Nature, Bateson prefaces his reexamination of that belief with a question to be answered, one on which hangs the major premises of this book. Asking, "What is the pattern which connects all the living creatures," Bateson proposes that an aesthetic of connection, of pattern, of relationship is the defining metaphor for a cybernetic mind which exceeds the outlines and boundaries of Cartesian logic (Mind and Nature 7). His intention in this book is to find those connections that will render differences between biological theory and cybernetic theory permeable and penetrable, to examine how "differences though static in the outside world can generate events if *you* move in relation to them" (Mind and Nature 199). "So What?", his concluding metalogue (a literary device he employs to great effect, advancing his theories by means of a hypothetical dialogue between "father" and "daughter"), outlines what would become his final project.

Published in 1987, seven years after Gregory Bateson's death, Angels Fear: Towards an Epistemology of the Sacred, was edited by Mary Catherine Bateson from her father's manuscripts, notes, and correspondences. As the ending chapter in Mind and Nature suggested, Gregory Bateson's final project was to have been an exploration of the

question, "Onto what sort of surface shall 'aesthetics' and 'consciousness' be mapped?" (Mind and Nature 198). This mapping was to have provided the next "step" in his ecology of mind, an interrogation of the beautiful and the conscious, and an attempt to address a third term, the sacred. By her own admission, his daughter found the task of attempting to complete her father's unfinished questions a daunting one; in her introductory remarks, she calls the published book a "testament, but one that passes on a task not to me only but to all those prepared to wrestle with such questions" (Angels Fear 2). To aid in the furtherance of that task, Ms. Bateson notes that her father's original, unedited manuscripts and notebooks will remain in the archives of the University of California, Santa Cruz, where future scholars might re-visit them, for yet another round of reevaluation and reinterrogation.

The final metalogue, authored by Mary Catherine Bateson and appropriately titled "Persistent Shade," reiterates Bateson's own wish for his legacy. At the conclusion of the Nineteenth Annual Korzybski Memorial Lecture, which Gregory Bateson delivered in January of 1970, he emphasized his belief that mind is immanent not only within the minor structure we know as the human brain but also along the continuum of an infinitely greater external trajectory, one not defined by physical limitations or by such conceptual outlines as life or death. He concluded his lecture by stating, "The ideas which seemed to be me can also become immanent in you. May they survive—if true" (Steps 471). In his daughter's final chapter of his less-than-final book, Bateson's persistent shade wryly points out that "such immortality as we have is in our ideas" (Angels Fear 201). Certainly, in Bateson's case, his legacy continues in the work not only of his colleagues and students, but also in the works that have evolved from his, that extend and broaden

his own ecology of mind whether explicitly acknowledged or not.[4] The patterns that connect them, the connections which betoken those patterns, ripple across disciplines and flow through texts and time. Bateson's theories and theories of theories, the patterns and meta-patterns that informed his evolving epistemology, far exceed the brief canon of his published thought. Critical to the pursuit of his immanent imprint is a closer look at his theories of abduction and recursiveness, and at how the evolution and revision of those theories circulate within any effort to trace the ongoing manifestation of Bateson's ecology of mind in its contemporary and futural contexts.

Abduction

In "The Science of Mind and Order," the introduction to Steps to an Ecology of Mind, Bateson stresses his belief that the early nineteenth and twentieth century scientific emphasis on matter, on substance, has occluded a more vital and productive exploration of form as the organizing principle that connects all living things. By leading the reader to follow his own spiraling progression from observed physical phenomena to observed relational phenomena, Bateson deftly underscores his own growing recognition of cross-disciplinary evidence that suggests the primacy of form as a meta-message circulating throughout the ecology of mind. It is this recognition of form through connective patterning that he will come to define as an alternative epistemological methodology—he will espouse not induction or deduction but *abduction.* In a pivotal series of Comments which follow each of his thematic sections in Steps, he unpacks the connections which might elude the impatient reader, one who receives the message signal (in Bateson's rephrasing of Russell, "Zero learning") and who comprehends it ("Learning I"), but who

fails to make the necessary movement beyond that initial frame of reference to learning-about-learning, to a reflexive frame of consideration that incorporates what-is-learned while considering what contexts that specific learning delimits (Bateson called this type of learning-to-learn "deutero-learning" or "Learning II"). By reintroducing the knowledge stream that he has developed sequentially through the included essays and lectures, and by then considering the epistemology of that epistemology, the description of that description, Bateson also subtly assists his reader to participate in the recursive process that is immanent within the ecology of Mind.

Bateson concludes *Part II: Form and Pattern in Anthropology* by calling for a new interpretation of interdisciplinarity—one that will not simply reframe information in the discursive code of one discipline or another, one that will not simply offer a lateral move to a reclassification or renaming of things, but one that demands an identification of relationships however they are described (Steps 153). He illustrates his argument by proposing an analogy between the formal structure of a flowering plant and that of a sentence, and wonders at the potential significance of pursing an analogy between two seemingly disparate examples, one rooted in the natural sciences, one so manifestly a signifier of cultural production. He is suggesting not an inductive move constructing theory from data, not a deductive lineage that dissects data from theory, but rather an abstract leap to the recognition of an analogous relationship (critically, that relationship is already-immanent; it is not the triumphant and transcendent imposition of a connection by an external and omnipotent mind). One system of relationship that is housed in Nature…one that is immanently situated in Mind. He goes on to propose a radical addition to evolutionary science, the concept of co-evolution of species and environment.

Bateson writes, "It is the *context* which evolves," a statement of such breathtaking simplicity and yet of such implicative enormity that it fundamentally reorders Darwinian thought (Steps 155). It is not the relata, the data, the *content* of our descriptive notation that should be the focal point of this new interdisciplinary science, but rather the relationship between the message and the *context*, the ecology of the situation *into which* the message is delivered (and, as he later emphasized, the context *out of which* the message is coming), which must be considered in any discussion of any evolution (and by abduction, by any discussion of any system or set of contexts).

By the conclusion of *Part III: Form and Pathology in Relationship*, Bateson has extended the results of his studies of psychology, family relationships, and pathologies of communication to his original anthropological observations. Still concerned with form and analogy as meta-communicative devices, his use of logical types has led him to map the communicative pathologies in schizophrenia and alcoholism onto his observations about co-evolution and the relationships immanent in and transgressive of contextual territories. In a series of related essays, Bateson explores the communicative dysfunction that schizophrenics commonly exhibit, a pathology he compares to an inability to distinguish between logical types or frames of reference, the tendency towards the use of "*unlabeled* metaphors"(Steps 205). Bateson observes that schizophrenic speech patterns are adaptations born of context; that certain family relationships become so toxic for an individual member that he/she resorts to this metaphoric speech as a protective response, one that is simultaneously adaptive and pathological. He concludes this section by noting that such a response is illustrative of the incompatibility of the logic of adaptation and the logic of survival: what is at once a successful adaptation in the individual can have

destructive and devastating consequences for the survival of the system as a whole (Steps 339). For Bateson, this suggests that these ideas about schizophrenia, the double bind, and pathology are concepts which "cease to be matters of individual psychology and become part of the ecology of ideas in systems or 'minds' whose boundaries no longer coincide with the skins of the participant individuals" (Steps 339).

The next two sections of Steps to an Ecology of Mind represent the systematic and cybernetic dialectic between old and new information, reinforming and recycling disparate disciplinary concerns to produce newly analogous observations. *Part IV: Biology and Evolution*, returns Bateson to the anti-Darwin arguments of his father, while *Part V: Epistemology and Ecology* moves him forward to his more recent forays into cybernetics and the environmental arguments that would characterize his later works. In both, his concluding comments focus on his growing conviction that a new science must provide a conceptual bridge between his observations on the flow of information in the human world with his analogous and yet seemingly contradictory observations about flows of information within nonhuman organisms and between them and their environments. There is a sense of his growing concern about the impacts of technology on the health of the ecology, and a reiteration of his sense that purposive human intervention can become pathological in natural systems. In the concluding section of Steps to an Ecology of Mind, *Part VI: Crisis in the Ecology of Mind*, Bateson offers a series of thematically linked lectures without an ostensible conclusion or his customary Comments section. The "crisis" he describes is one that he believes "arises out of errors in our habits of thought at deep and partly unconscious levels" (Steps 495). It is a crisis which Mind and Nature is intended to address.

As Peter Harries-Jones observes in his excellent survey of Bateson's thought, Recursive Vision: Ecological Understanding and Gregory Bateson, Bateson began to find the language of logical types too limiting to enunciate his attempts to map the connections between natural systems and human systems of communications, a challenge reflected in his intellectual movement from the structuralist thematics of Steps to the more organic emphasis in Mind and Nature (Harries-Jones 168). Conflating the evolutionary mechanism of genetic change with the cybernetic phenomenon of learning by assuming that each is a stochastic process (a process that combines both a random component with a nonrandom selection process), Bateson stresses the necessity for replacing Cartesian duality with a unified philosophy of nature and mind that he intimates in his subtitle through the clarification of two key thematics, abduction and recursion. While he utilized both in his stylistic and his intellectual methodology in Steps, it is only in his third book that he explicitly names them.

Rather than simply imposing connective patterns across the Mind/Nature dualism through the traditional logistics of inductive or deductive reasoning, Bateson proposes instead the use of another methodology: *abduction*,[5] the "lateral extension of abstract components of description" (Mind and Nature 133). As a means of recognizing and articulating relationships without respect to formal boundaries or limitations, abduction is both transgressive and descriptive; it represents both a leap of abstraction and an acknowledgement of an immanent and a priori analogy, the recognition of a relationship rather than the creation of one. It is evidenced in an array of examples that Bateson lists, including "metaphor, dream, parable, allegory, the whole of art, the whole of science, the whole of religion, [and] the whole of poetry," and it lends itself to another concept that

Bateson demands in the communicative framework of both natural and human systems, the process he terms "double description" (Mind and Nature 133, 134). Bateson's difficulty with using logical theory to ground his new epistemology is its abhorrence of paradox; indeed, the theory of logical types was devised specifically to preclude the presence of paradox in philosophical thought. The relational context that prompts the schizophrenic's adaptive (if ultimately pathological) use of unlabeled metaphor can accelerate into the dilemma Bateson named the double bind, a paradoxical situation in which an individual finds that a sequence of otherwise appropriate behaviors results in such negative consequences that the individual resorts to otherwise inappropriate behaviors as a means of resolving the increasingly conflicting circumstances,[6] Paradox is thus both the source of creativity and innovation in response to contextual flux as well as potentially the maelstrom from which pathology may emerge.[7]

Paradox is also inescapably present in nature; an explanatory system that abhors a paradox cannot sufficiently stand as a discursive rhetoric for a new science that attempts to conflate natural systems with human communicative ones. In a fascinating lecture delivered in 1980 and published in Donaldson's A Sacred Unity, Bateson details the sequence of thought that led him away from logic and towards another solution. In "Men are Grass: Metaphor and the World of Mental Process," he suggests that while "logic was a most elegant tool for the description of lineal systems of causation...that logic could be used for the description of biological pattern and biological event has never been at all clear. Indeed, it is rather sharply clear that it is unsuitable, at least in the description of such circular causal systems and recursive systems as will generate the paradox" (Sacred Unity 239). He proposes instead to apply a form of thought that he epitomizes in the type

of syllogism called "affirming the consequent," one that he suggests is more suggestive of his own way of thinking and of that of the poets: "metaphor…Meta-phor"—a synonym for abduction (Sacred Unity 239). He introduces the following syllogistic example:

> Grass dies.
> Men die.
> Men are grass.

For Bateson, what is revealed in this poetic abstraction is the very kind of epistemological tool needed to think the patterns and connections of the cybernetic organism-plus-environment. In this syllogism, the equation that emerges represents a leap through process, through the verb-as-predicate, *not* a lineal progression through subjects (as in the filial linkage demonstrated in the more logically acceptable "Men die. Socrates is a man. Socrates will die."). In abduction, the isolation of human subjects across the Cartesian divide of Mind from Nature is breached by the abstract leap to co-evolution, to relational adaptation, to shared ecology. Near the end of this lecture, Bateson suggests that "Life, perhaps, doesn't always ask what is logically sound" and that abduction/metaphor predates the Socratic logic that would deny it. "Metaphor was not just pretty poetry, it was not either good or bad logic, but was in fact the logic upon which the biological world had been built, the main characteristic and organizing glue of this world of mental process which I have been trying to sketch for you in some way or other" (Sacred Unity 241).

In order to advance his argument for abduction as a necessary conceptual vehicle, Bateson must adapt the theory of logical types with an evolutionary epistemology that allows for a nonlinear apprehension of relationship, even at the risk of embracing the

random as part of this new cybernetic holism. As he notes, "we must pass through the threat of that chaos where thought becomes impossible" if we are to preserve the flexibility necessary for survival, whether intellectual, communicative, or evolutionary (Mind and Nature 134). In 1970, Bateson completed an essay entitled "Ecology and Flexibility in Urban Civilization," in which he posited that change manifests itself adaptively in two ways. Short-term, somatic alterations provide immediate response to environmental stimulus without resulting in the hard-wired, more permanent changes evidenced in genetic change. In order to remain highly adaptive, an organism needs to avoid the kinds of permanent genetic changes that might limit further adaptability; what is definitive of survival is flexibility, a quality Bateson defines as "*uncommitted potentiality for change*" (Steps 505). Within certain contexts or thresholds of tolerance, change is simply the ability to move along an available range of responses, the wider the range the better, with an oscillating and doubly descriptive movement between the organism and its environment as each attempts to reach some new plateau of stability (Mind and Nature 134). Flexibility in natural systems demands a reservoir of potentiality that must be derived from the random, the not-yet-selected, and the wild diversity implicit in a chaos not proscribed by the rational or the logical. Flexibility in communication systems must likewise be generated not from the known but from the abstract, from that which is not-yet-defined, and also from that which is not limited by the preferences of the logical. In 1967's "Cybernetic Explanation," Bateson wrote prophetically that "all that is not information, not redundancy, not form and not restraints—is noise, the only possible source of *new* patterns" (Steps 416). The linear logic of a material world of things is not sufficient to apprehend the stochastic emergence

of the new; as difference is itself not a quantifiable thing but rather an idea predicated in the terms of a relationship, it requires some other notation to convey it[8]. Abduction provides a lens that informs difference, a perspective that disregards outlines and abstracts patterns, where mind and nature defy the dualisms of Cartesian rationality, and where the confines of hierarchical logics yield to an unrestrained ecology of ideas, one infused and sustained by a recursiveness that is vital to ensuring a necessary flexibility[9].

Recursiveness

The first appearance of the Bateson term *recursiveness* appears near the conclusion of Mind and Nature. Wrestling here as elsewhere with the restrictions imposed on his efforts to find a coherent descriptive context that embraces both the logical ecology of mind and the natural ecology of the nonhuman pre-linguistic natural world, Bateson muses that "it appears that the idea of 'logical typing,' when transplanted from the abstract realms inhabited by mathmaticological philosophers to the hurly-burly of organisms, takes on a very different appearance. Instead of a hierarchy of classes, we face a hierarchy of *orders of recursiveness*" (Mind and Nature 188). Recursion refers to the repeated application of a rule or procedure to successive results; in The Oxford American College Dictionary, this is ironically demonstrated in the definition of recursion, "the repeated application of a recursive procedure or definition" (1137). Bateson's interest in recursiveness is directly related to his study of feedback and feedback mechanisms, a characteristic process implicit in cybernetic systems; however, an awareness of this kind of behavioral loop was also present in his early studies of culture contact. Bateson was interested in what he called schismogenesis, which he

defined as "*a process of differentiation in the norms of individual behaviour resulting from cumulative interaction between individuals*" (Naven 175). His interest in how the cumulative effects of some repeated behavior/*process* result in the change or differentiation of a cultural/systemic *form* is reaffirmed in much of *Part II: Form and Pattern in Anthropology* in Steps to an Ecology of Mind; his exploration of competitive and noncompetitive behaviors and his interrogations of symmetrical versus complementary processes in relationships across a variety of cultural divides (gender, age, nationality), and his attempts to correlate those responsive changing patterns with the notion of biological coevolution of species-and-environments, lead him to an interest in the importance of feedback in communication systems. In Mind and Nature, Bateson elaborates on the concept of feedback by referencing Horst Mittelstaedt's work, which noted that there were two distinct methods or behavior types that describe the process of perfecting an adaptive act (Mind and Nature 182). Comparing the differences between shooting a rifle and shooting a shotgun, Bateson suggests that while shooting a rifle consists of a series of singular acts of self-correction (aim, correct, aim, correct, shoot), shooting a shotgun is a more complex process, one where the marksman cannot self-correct before shooting.[10] In this type of adaptive act, "there is no possibility of error correction in the single act. To achieve any improvement, correction must be performed upon a large *class* of actions" (Mind and Nature 183). In other words, in order to self-correct, the entire process or class of actions that is shooting the shotgun (raise the gun + aim + shoot) must be fed back into the system in order to lead to any kind of self-correction. Critical to this kind of method, which Mittelstaedt called calibration, is the requirement of practice, of the noniterative repetition of that same class of actions, each

round or cycle subtly altered by the information/learning initiated by the reconsideration of the previous sequence(s) of actions.[11] For Bateson, this distinction is a revelation: simple feedback is much like his earlier concept of Learning I; calibration, like Learning II, describes a higher order of learning, a second-order level of feedback, and the two may be viewed as a metaphor/abduction for the issues of process and form that he first investigated in Naven. In a later essay, he connects this same distinction to recursiveness. He observes that Norbert Wiener pioneered the idea of a first-order recursiveness or "feedback" in his description of the way causal information in cybernetic systems moved in a sequential, circular pathway. Second-order recursiveness, of the kind which he attributes to the work of Varela and Maturana,[12] is of a more complex nature (Sacred Unity 220). First-order recursiveness equates to simple feedback in systems, in the processes he describes in both natural evolutionary adaptation and in the mental activity of learning; second-order recursiveness then can be understood as the higher-order move to patterns of self-reference, to introversion, and to the embodiment of difference that potentially gives rise to the perception of a discrete and atomistic self.[13] As Bradford Keeney straightforwardly translates Bateson's recursiveness into the dynamics of family therapy, if one imagines recursiveness as a snake that eats its own tail, "[s]peaking of recursion enables us to point to the same snake, while indicating the order of recycling... [There is] a general self-referential paradox underlying all observing systems: The observer's observations may include his observing" (32).

For Gregory Bateson, recursiveness commands not only a theoretical perspective that circulates throughout the cybernetic Mind, but also an ethical duty to maintain a constant awareness of the whole system, even while considering any part of that system

in detail. He notes the oscillation in his own developing epistemology, a seemingly circuitous and repetitive movement between form/tautology/calibration and process/feedback, and he suggests that it is his growing awareness of recursiveness in his own thinking that has radically altered his knowing. He comments:

> [A]s you become aware that you are doing it, you become in a curious way much closer to the world around you. The word "objective" becomes, of course, quite quietly obsolete; and at the same time the word "subjective," which normally confines "you" within your skin, disappears as well. It is, I think, the debunking of the objective that is the important change. The world is no longer "out there" in quite the same way that it used to seem to be. (Afterword 245).

The same theme of a mind/nature immanent within an oscillating cybernetic system which emerges between the theoretical abstractions of form and process, structure and flux, reappears in Angels Fear: Towards an Epistemology of the Sacred. The recursiveness that pervades Bateson's thought makes itself felt in the echoing repetitions that the reader encounters throughout his texts. Indeed, Bradford Keeney points out in a footnote to his introduction to Aesthetics of Change that it is because of his particular stylistic choices that Bateson's work is "sometimes regarded as difficult to read" (6). Just as the organization of material, the thematic and chronological ordering that Bateson imposed on his selections in Steps to an Ecology of Mind, inexorably lead the reader to re-encounter ideas newly filtered through the perspectives of disparate disciplines, so Bateson also calibrates his reader's appreciation of a particular idea by a kind of enforced practice of that idea. In Chapter IV of Angels Fear, "The Model," he returns to his examples of calibration and feedback as models of form and process, models from which abduction might "draw...from phenomena in different fields that which is shared among

them" (Angels Fear 37). Here, Bateson is consciously moving towards an interrogation of the aesthetic and the sacred, towards an articulation of wholism as necessity. The distinction he wants to emphasize here in his comparison of the acts of shooting a rifle versus shooting a shotgun concerns the way each models a different kind of error correction. He points out that while the rifleman has the opportunity to correct for error before he shoots, that correction is aimed at the singular instance of that situation, Each action presents a discrete opportunity for success, a unique opportunity where aim can be consciously adjusted to bring about the desired result, but that correction ends as that single shot is fired. Shooting a shotgun, on the other hand, offers no opportunity for purposive correction prior to the act of firing; practice, repetition, the calibration of muscle memory and timing, all result from the process of an error correction that can occur only after the shot and that will inform all future efforts, recursively becoming a part of the very system it seeks to correct. Drawing from this example, Bateson describes his own efforts to learn to play the violin as a child, an infelicitous exercise that he approached as though wielding a rifle rather than a shotgun. "I tried very hard, when playing, to play *right*," he notes. "I attempted to use error correction in the single action of each note. The result was unmusical" (Angels Fear 45). The lesson here is in the interface between levels or hierarchies of orders of recursiveness, in the difference between conscious aim and an unconscious habit learned through practice, in a shift of focus from the part to the whole, from the singular to the sequential. Bateson is again using abduction as a means of making visible the repetitions/patterns/redundancies which move across thematic or disciplinary boundaries, causing them to seem less divisive and more descriptive. His argument in Angels Fear is simply that "when we focus too

narrowly upon the parts, we fail to see the necessary characteristics of the whole" (Angels Fear 52).

Recursiveness and abduction create bridges to a greater wholeness, a monism that is its own holism. Denying the existence of or need for a transcendent supernatural being and equally distrustful of an egocentric and triumphant humanism, Bateson is more concerned with enunciating the potentiality immanent in cybernetic Mind as a metaphor for that dynamic and dangerous holism. In the 1964 essay, "The Logical Categories of Learning and Communication," Bateson expanded his discussion of the orders of learning to speculate on Learning III, an outward progression in mental process beyond the recursive self-referentiality of Learning II towards a profound reorganization in which "[the] 'self' will take on a sort of irrelevance. The concept of 'self' will no longer function as a nodal argument in the punctuation of experience" (Steps 304). The descriptive differences that are necessary to maintain the outlines that delineate contexts and define selves are subsumed in "the resolution of contraries [which] reveals a world in which personal identity merges into all the processes of relationship in some vast ecology or aesthetics of cosmic interaction" (Steps 306). Included in those contraries which Bateson hopes to see resolved is the Cartesian separation of man from nature, a resolution which intimates a necessary unity that ultimately leads to the aesthetic wholism that Bateson will identify as the sacred. That the movement towards such an un-limited order of becoming can be both dangerous and creative is clear; to achieve Learning III would require a mental leap into the plenitude of the void, into the dynamic and unstable space that is the interface between the conscious and the unconscious. In a revealing interview from 1979, Bateson warns that "we have lost a wholeness of being which would include

'that' and the 'other' side together…I think the sacramental is being damaged all the time. The damage is the taking apart. The sacredness is the coming together" (Sacred Unity 301-303).

Abduction is a tool that fosters the recovery of the sacred by encouraging the re-cognition of those patterns which connect. It is a methodology Bateson most frequently identified with art and poetry, tools that "are discoveries in the literal etymological sense of the word. They are *uncoveries* of that which one knew before. Then sacredness has something to do with this covering and uncovering deeper components" (Sacred Unity 303, emphasis added). Recursiveness contributes to that burying of ideas, to the submersion of ideas in the unconscious mind, the repository of habit. Implicit in Bateson's understanding of the difference between the conscious and the unconscious mind is his assertion that Freud's theories err in placing too much emphasis on the conscious mind as primary and the unconscious mind as secondary; Bateson reverses the emphasis, insisting that the conscious mind is a limited field of mysterious yet mechanical activity, while the processes of the unconscious are "continually active, necessary, and all-embracing" (Steps 135-136). For Bateson, the arts (and here he means painting, poetry, music, dance—those non-Procrustean forms of communication that are in themselves metaphoric and analogous rather than linguistically specific) potentially serve as a bridge between the conscious and the unconscious, a way of communicating externally that which dwells inwardly, the manifestation of the "outward and visible sign of an inward and spiritual grace" (Steps 35). The significance of this is that art is abductive; it affords us the opportunity to enter into the relationships it expresses, to fully enter into the present rather than to merely observe it, to apprehend not just the

arborescent image present in consciousness ("the *arcs* of circuits") but also the complete circuit, the circuits of circuits, the rhizomatic interrelatedness that is the sacred (Steps 145).[14] In 1967, Bateson wrote that art "has a positive function in maintaining what I called 'wisdom,' i.e., in correcting a too purposive view of life and making the view more systematic" (Steps 147). Yet the function he names is not a quality or property of any specific work of art; it is rather a way of describing what can happen through the mediation of art in its articulation of a conjunctive synthesis between the conscious and the unconscious, between the secular and the aesthetic. In 1979, Bateson observed:

> [F]unction is inherent in relations and not in things. An ax does not have a use. The use of an ax is related to its position between a person and a tree. Now if you want to ask about the function of aesthetics I will say, well, between what and what, within what whole are you attributing function to what parts? "Function" is a part word and not a whole word. Aesthetics and sacred tend to be whole words, words about wholes, and you can't talk about the function of a whole. It is no good saying, "What is the meaning of the universe?"...Because to say, "What is the meaning of the universe?" assumes there is another entity for whom the universe has meaning. Meaning is not internal. It is between parts. (Sacred Unity 304)

Meaning

It is that phrase "between parts" that is critical to any further exploration of the exponentially expanding cybernetic Minds which Bateson proposes, within and between which his critical and ecological epistemology recursively resonates. Meaning is constructed rather than innate, and it is dynamic rather than static—it arises in relationship and flows between differences; meaning is information. Information is the stuff of mental process, and for Bateson, "the mental world—the mind—the world of

information processing—is not limited by the skin" (Steps 460). The ecology of mind that Gregory Bateson proposed would resonate with the patterns that connect not only across disciplinary boundaries but also across the discrete self-referencing entities or selves that are parts of this larger, cybernetic whole. In his introduction to Steps to an Ecology of Mind, Bateson suggested that his primary reason for assembling the book was not to answer questions but rather to ask them, to initiate the first round of a recursive epistemology that would resonate long beyond his own mortality. He proposes such questions as "How do ideas interact? Is there some kind of natural selection which determines the survival of some ideas and the extinction or death of others? What sorts of economics limits the multiplicity of ideas in a given region of mind?" (Steps xxiii). In Mind and Nature, he asks, "What pattern connects the crab to the lobster and the orchid to the primrose and all the four of them to me? And me to you?" (Mind and Nature 7). His final book, Angels Fear, was, as he wrote, "intended to begin the task of making the new challenges perceptible to the reader and perhaps to give some definition to the new problem. Further than that I do not expect to go" (Angels Fear 14). To pursue the constellation of recursive inquiry that Bateson launches, it is necessary to consider how his ideas have been both explicitly and implicitly circulated through an ecology of Mind, to look for echoes of his epistemology across the orders of contemporary thought. John Brockman suggests in his Introduction to About Bateson: Essays on Gregory Bateson that "Bateson is not clearly understood because his work is not an explanation, but a commission" (5-6). Bateson, when asked to write an Afterword to this collection, quoted himself as having responded, "Don't let it be a *Festschrift*," and instead suggested to Brockman that "you would ask your authors rather for some work and thinking of theirs

that might have developed out of or alongside some part of my work" (235). That suggestion will serve as the commission necessary to take the further steps into this ecology of Mind, steps towards an ecology of the situation.

Notes

[1] It is also noteworthy that it was during this period of his personal life that Bateson met, married, and worked with anthropologist Margaret Mead. Together they published another anthropological work, Balinese Character, and their only child, daughter Mary Catherine Bateson, actively assisted her father in his later publications.

[2] William Bateson gained notoriety for his efforts to revitalize the theories of Gregor Mendel. Bateson is credited with coining the term "genetics," and his youngest son was named Gregory as a nod to Mendel. For an extensive discussion of the senior Bateson's influence on his son's career and interest in anti-Darwinian notions related to both genetic and somatic change, see David Lipset's biography entitled Gregory Bateson: The Legacy of a Scientist. Lipset also contributed an abbreviated version of this story in his chapter "Gregory Bateson: Early Biography" to John Brockman's collection About Bateson: Essays on Gregory Bateson.

[3] The theory of logical types was advanced by A.N. Whitehead and B. Russell in 1910's Principia Mathematica as a means of avoiding the paradox that arises when a set or category of objects is confused with the discrete members of that set. To distinguish between a class and its members so as to avoid the paradox of conflation, the theory of logical types demanded that the logical level of any term must clearly specify its level. Bateson and his associates, developing a series of theories about communicative paradox and its pathological manifestation in schizophrenia, extended the notion of logical types to hierarchical and sequential levels of learning. The groundbreaking 1956 lecture, "Toward a Theory of Schizophrenia," and 1964's "The Logical Categories of Learning and Communication," both contained in *Part III: Form and Pathology in Relationship* in Steps to an Ecology of Mind reflect Bateson's application of Russell's theories to his own work. I am also indebted to Bradford Keeney's Aesthetics of Change for a clearly stated exegesis of both Russell's theories and Bateson's appropriation of them.

[4] Included in the Bateson bibliography is A Sacred Unity: Further Steps to an Ecology of Mind. Published in 1991, a decade after Bateson's death, by editor Rodney E. Donaldson, who served as literary editor for the Bateson estate, this is a collection of additional lectures and essays by Gregory Bateson. Donaldson chose to present this material following the same section headings and chronological ordering as that of the original Steps to an Ecology of Mind, while also adding a final selection of Bateson's works under the heading "Health, Ethics, Aesthetics, and the Sacred." While not originally conceived by Gregory Bateson, this work is significant for its additions to his epistemology. Donaldson also compiled an exhaustive bibliography of the entire canon of Bateson's published work (including articles, reviews, interviews and books) which is also included in A Sacred Unity.

[5] "Abduction" is a term that Bateson liberates from the philosopher C.S. Peirce. Noting that Peirce applied the word to "that part of the process of inquiry which proposes that a given set of phenomena is a case under some previously proposed rule," Bateson characteristically gives the phrase his own interpretation and employs it in that redefined capacity. See the 1976 essay, "*A Formal Approach to* Explicit, Implicit, *and* Embodied *Ideas and to Their Forms of Interaction*" reprinted in Donaldson's A Sacred Unity, p. 186.

[6] In order to fully connect Bateson's research on schizophrenia and double bind theory, see the essays "Toward a Theory of Schizophrenia" and "Double Bind, 1969," both included in Steps to an Ecology of Mind.

[7] For an excellent explanation of the limitations of Russell's Theory of Logical Types, specifically with regard to paradox, and to the ways in which Bateson recycled these theories productively, see Bradford P. Keeney's Aesthetics of Change, an invaluable application of Bateson's theories to the practice of family therapy. Keeney notes that "Bateson adopted logical typing as a descriptive tool for discerning the formal patterns of communication that underlie human experience and interaction" and that "logical typing can therefore be simply regarded as a way of drawing distinctions. From this perspective, logical typing can be used to disclose rather than conceal self-reference and paradox" (30).

[8] Bateson's theoretical understanding of difference and its implications for pattern, number, and cybernetic mind are more thoroughly discussed in Part II of this thesis.

[9] The strength of Mind and Nature is not in its tone or writing style, which is almost abrasively abrupt in contrast to the eloquent, if circuitous, rhythms of Steps to an Ecology of Mind, but in its embodiment of Bateson's own evolution as a thinker. In his Afterword to a compilation of essays produced out of the 1979 Asilomar Conference honoring Gregory Bateson, philosopher and logician Stephen Toulmin roundly criticizes both the style and content of Mind and Nature. While I agree with his negative response to the general tone of the book, written during a period of serious illness for Bateson and with considerable editorial input from his daughter, I disagree with his other assessments. In what I believe to be a serious misreading, Toulmin observes, "In many ways, indeed, Bertrand Russell is the last philosopher one would have expected Bateson to choose as an ally. (C.S. Peirce would have been a happier choice.) Neither in his epistemology nor in his logic did Russell ever show much sensitivity toward the significance of evolutionary ways of thought" (367). Toulmin is mistaken on both counts. Bateson does in fact use Peirce's ideas in his work (see Notes 5 and 10 to this section), and to suggest that he was seeking an ally in Russell is to misunderstand the concept of abduction as Bateson employs it. Bateson demonstrates abduction here as the transgression of disciplinary boundaries (not the search for allies) and as the abstract leap to recognition of pattern in situations where pattern may not first be apparent. Bateson found great resonance in the logical and mathematical elegance of Russell's theories and used them quite originally to found his own theories of learning and knowledge process; in Mind and Nature, he is engaged precisely in evolving those concepts beyond Russell's intended use without feeling either the necessity or the desirability of abandoning them.

[10] Bateson contrasts feedback and calibration using the rifle/shotgun example in both Mind and Nature and in Angels Fear, but he appears to introduce a distinction in the latter example. In Mind and Nature, both the rifle and the shotgun are employed to shoot a flying bird, while in the Angels Fear chapter he seems to suggest that only in the instance of the shotgun is the target mobile. The emphasis on the ability for error correction prior to shooting the rifle, to effectively view each instance of rifle shot as a singular act of feedback and correction made *prior* to the actual firing of the shot is easier to visualize if the rifle is aimed at a stationary target. In the case of the shotgun, Bateson's emphasis is on the fact that there is no possibility for error correction within the single act of shooting; calibration, or a *class* of serial actions ultimately resulting in an improved performance, requires a recursive practice.

[11] Author Bill Brown devotes the second chapter of his book A Sense of Things to the concepts of repetition and iteration, drawing heavily from the philosophies of Charles Saunders Peirce, from whom Bateson adapted the idea of "abduction." Also referencing the work of such disparate figures as William James, Gertrude Stein, and the French theorist Gilles Deleuze, Brown's thoughts on noniterative repetition and on habit formation are both instructive and eerily close to Bateson's development of the idea of calibration. Specifically, he notes that Deleuze makes a fine distinction between repetition and replication. If calibration both requires the repetition or practice of an act that is always subtly altered by the error perception and correction of the previous instantiation of that act, then as Brown notes, "If no event (given its uniqueness in time) is reducible to another, then 'repetition' must name a difference" (73). See Part II of this thesis for a more thorough discussion of Bateson's use of difference and its relation to the work of Deleuze and Félix Guattari.

[12] The work of Chileans Humberto Maturana and Francisco Varela diverges sharply from that of Bateson, emphasizing autonomous self-referencing and closed systems that lack the connective holism Bateson envisions for his cybernetic Mind. A comparison of these competing philosophies is beyond the scope of this paper. For a brief discussion of the points of both confluence and divergence of their work with that of Bateson, see the section entitled "Autopoiesis: The Bootstrapping of Form" in Harries-Jones' Recursive Vision.

[13] Bateson engages the idea of self-reference and the notion of self repeatedly throughout his various essays, lectures, and books, yet his ideas are seldom referenced by post-modern authors struggling with the

same issues. In 1977, Bateson addressed a conference in New York on "The Birth of a Matrix, or Double Bind and Epistemology," reprinted in A Sacred Unity. In this lengthy lecture, in which he traces many of the lines of flight that contribute to the outlines of his cybernetic epistemology, he suggests that the discursive pathology of double bind might spur some creative alternative, some kind of resistant response that might radically alter the pathology from which it springs. He also suggests that there are other answers to other questions that lie beyond the double bind, including the notion of self, that "half mythological entity whose apparent subjective reality somehow increases in situations of reflexive awareness." While beyond the scope of this paper, it would be interesting to interrogate Bateson's notions of the self and self-referentiality against those proposed by members of the Franklin School and those articulated by Judith Butler in Giving an Account of Oneself. For Butler, the paradox in the attempt to account for the self is that the self can never know its origin; its originating response, its first act of distinction, is in response to the demand of another. In his 1977 Afterword to John Brockman's About Bateson: Essays on Gregory Bateson, Bateson uses a poetic description of a smoke ring, introverted and endlessly turning upon itself, as a figure for a self that is called not by another but rather forms out of the self-same material as its environment, given "duration and location and a certain degree of separation by virtue of its inturned motion" (246).

[14] In his often expressed belief in the power of art and its relationship to the unconscious, Bateson's theories resonate both with and against those of Theodor W. Adorno and other members of the Frankfurt School. Like Adorno, Bateson felt that art had the power to convey the "shock of the unintelligible," to offer a liminal space within which aesthetic truths might be uncovered. Bateson saw art as metaphoric and as engaging something more than mere consciousness; he distinguished between the aesthetic and appetitive, disparaging the purposive much as Adorno problematized what he considered to be committed art, the deliberately political. In his 1962 essay, "Commitment," Adorno wrote that "it is not the office of art to spotlight alternatives, but to resist by its form alone the course of the world, which permanently puts a pistol to men's heads" (304). Bateson would, I think, agree with this assessment. Despising the purely purposive and linguistic appropriation of art by the conscious mind (the univocal question, "What does art 'say'?"), he preferred to interrogate how art, metaphor, and dreams open un-labeled un-named potentiality (he was fond of Isadora Duncan's response, "If I could tell you what it meant, there would be no point in dancing it." See Steps, p. 137).

PART II: WHEN A FRENCHMAN WAVES HIS ARMS

One of the fundamental questions which Gregory Bateson advances in Steps to an Ecology of Mind is to consider whether, if we accept the parallels between the world of natural evolutionary process and the world of mental process, there might be something analogous to natural selection with respect to ideas. Do some ideas survive while others die? He notes that "Socrates as a bioenergetic individual is dead. But much of him still lives as a component in the contemporary ecology of ideas" (Steps 467). As with Socrates, so with Gregory Bateson—while some of his ideas have long been adapted out of the ecology of mind, some have continued to circulate, combining and mutating with those of other theorists, philosophers, ethicists, critics, and activists in the richly diverse heterogeneous idea-pool that is the cybernetic mind.

Like the map of any genome, Bateson's ideas are expressed in some cases explicitly, in reiterative chains which make identification apparent, while in other contexts only nuanced traces remain in recombinant mutations that only implicitly suggest his lines of thought. Many of his students and professional colleagues tend to interpret or to extend Bateson's ideas strictly within the disciplinary context that characterizes their association with him; hence, Bradford Keeney, who studied with Bateson during his period of intense interest in psychology, applies Bateson's ecological premises to the practice of family therapy. In a similar vein, Carol Wilder-Mott and John Weakland encounter Bateson strictly in terms of his cybernetic theory, without extending

his observations beyond that somewhat narrow range of his interests. Other readers of Bateson's work engage his notions of pattern and ecology more directly by applying them to environmental themes across a variety of humanities genres. In 1980, agrarian author and poet Wendell Berry's poem "A Grace" bears the subheading *for Gregory Bateson* and references "the chief beauty of the world, pattern of patterns" (8-9). In an evocatively lyrical chapter on "Place" in The Eros of Everyday Life, feminist writer Susan Griffin argues for the incontrovertibility of an interdependence between human thought and the natural world, observing that "if by means of duality Western culture has secured the illusion of transcendence, the culture is also blind to the order and pattern, the memory and intelligence, all the qualities of abstract thought, that exist *in* nature" (81). It is hardly surprising that on the following page she references Gregory Bateson and his use of the "Men are grass" syllogism to support her argument that abstract thought and metaphor are as characteristic of the natural world as of the mental. Ecocritics Deborah Bird Rose and Libby Robin, writing in the Australian Humanities Review, note Bateson's contribution to discipline-spanning thought in their argument in support of the emerging interdisciplinary collaboration we call environmental humanities. In Perform or Else: From Discipline to Performance, Jon McKenzie notes the importance of Gregory Bateson's work as foundational for theories of performance and play, employing his cybernetic models of feedback and recursiveness in conjunctive synthesis with the machinic apparatus of Deleuze and Guattari to identify patterns across seemingly disparate vectors of performance in the United States since the 1950s. What is particularly striking about McKenzie's use of Bateson's theories of play and fantasy is that his genealogy of Batesonian thought and influence stays firmly lodged in a citational

connection to anthropology and to cultural performance; McKenzie seems unaware of the far more direct and provocative patterns that connect Gregory Bateson to Gilles Deleuze and Félix Guattari, a connection that exemplifies Bateson's survival in the contemporary ecology of mind.

Gregory Bateson's thought and work had an enormous impact on the generation of French thinkers who emerged as critical theorists following the university protests of 1968. As Verena Conley elaborates in her critical pursuit of evidence of environmental consciousness in the work of contemporary French postmodernists, those emerging voices also tended to seize on the systemic and ecological implications of Bateson's cybernetic mind and to subsequently adapt them to their own lines of argument[1] (56). Bateson's influence on both Gilles Deleuze and Félix Guattari is manifestly evident, as these authors frankly acknowledge their debt to Bateson's imagery and ideas while extending them in a way that far exceeds theoretical and disciplinary boundaries. Writing together in 1980, philosopher Gilles Deleuze and psychiatrist Félix Guattari published A Thousand Plateaus: Capitalism and Schizophrenia, a radically unorthodox collection of collaborative thought which borrows its title from Gregory Bateson's ethnographic comparisons of Iatmul and Balinese culture. Bateson observed that while overtly competitive interpersonal behavior between Iatmul tribal members frequently led to some kind of climax, followed by a differentiation or change in behavioral norms (schismogenesis), personal interaction in Balinese culture seemed deliberately and culturally orchestrated to avoid climactic moments of cumulative personal interaction. Instead, he noted that "it is possible that some sort of continuing plateau of intensity" is substituted for a climax in certain kinds of Balinese cultural situations, a substitution that

discourages competitive behavior in a variety of interactions, including quarrels (Steps 113). It is that same plateau that Deleuze and Guattari incorporate into their title and into their most familiar metaphor, the rhizome. Noting that "a plateau is always in the middle" and that "a rhizome is made of plateaus," they seize on Bateson's plateau, elaborating on his usage of the term as a way "to designate something very special: a continuous, self-vibrating region of intensities whose development avoids any orientation toward a culmination point or external end" (22). They adopt Bateson's terminology and subsequently develop it, as he would, into their own:

> We call a "plateau" any multiplicity connected to other multiplicities by superficial underground stems in such a way as to form or extend a rhizome. We are writing this book as a rhizome. It is composed of plateaus. We have given it a circular form. (22)

Just as the reference to plateau originates with Bateson and then mutates into something that is both familiar and yet radically new in the Deleuze/Guattari context, there are numerous other images and phrases that circulate throughout A Thousand Plateaus which have their germination in Bateson. Schizophrenia, double-bind theory, and a metaphoric use of organic images as abductive syntheses across perceived boundaries[2] are only part of a remarkable confluence of thought that flows between this text and Steps to an Ecology of Mind. All contribute to a pattern that connects, a connection that emerges in a between that is "by no means an average; on the contrary, it is where things pick up speed…a perpendicular direction, a transversal movement that sweeps one *and* the other away" (Deleuze and Guattari 25).

The imprint of Gregory Bateson on Félix Guattari is even more apparent. Guattari begins his 1989 book, The Three Ecologies, with a quote from a 1969 Bateson lecture,

"Pathologies of Epistemology," and his call for "a praxic opening-out" of the three ecologies, the natural, the mental, and the social surely springs from Bateson's observation in that same lecture that "when you separate mind from the structure in which it is immanent, such as human relationship, the human society, or the ecosystem, you thereby embark, I believe, on a fundamental error, which in the end will surely hurt you" (Three Ecologies 53, Steps 493). Guattari notes Bateson's assertions about the necessity for the ecology of mind to extend beyond the corporeal limitations of the individual body, an argument that supports his own call for the recognition of the interdependency of three heterogeneous ecologies (Three Ecologies 54).

Guattari begins his 1995 book Chaosophy with an essay entitled, "So What," replicating the title of the concluding metalogue of Bateson's Mind and Nature. Here he notes his own eclectic interests, reminiscent of Bateson's disciplinary cross-fertilization, reflecting that "I was preoccupied with joining together different layers of things which fascinated me: the philosophy of science, logic, biology, early works in cybernetics [this is clearly a nod to Bateson]" and suggests that "my problem is to extract elements from one domain in order to transfer them into other fields of application" (8-9).[3] While much of this collection of essays and interviews focuses on his work with Gilles Deleuze and their explicit linking of capitalism and schizophrenia, Bateson's influence is apparent in the opening section.

His final book, Chaosmosis: An Ethico-Aesthetic Paradigm, offers Guattari's idiosyncratic insights into the same problems of the aesthetic and the sacred, viewed as a paradigmatic wholism, that absorbed Bateson in Angels Fear. As Bateson attempted to develop an interface between these two concepts, he often employed an almost prophetic

tone, asking "what is it to move through a larger and more complex mental system, involved in multiple encounters with other mental subsystems, each of which offers a certain possibility of wholeness?" (Angels Fear177). Guattari proposes a similar interface, noting that "the refoundation of politics will have to pass through the aesthetic and analytical dimensions implied in the three ecologies—the environment, the socius and the psyche" (Chaosmosis 20). That such an interface contains both potential for growth and potential for runaway, a critical understanding in Bateson's epistemology, also resurfaces in Guattari; his description of "Chaosmosis" as "a coming and going at infinite speed between chaos and complexity" is again reminiscent of Bateson's hypothetical model of mental process, depicted in Mind and Nature as a "*zigzag ladder of dialectic between form and process*" (Chaosmosis 75, Mind and Nature 182). Just as Bateson recognizes that there is, within cybernetic mind, the potential for insanity, so Guattari goes on to note that "the submersion in chaosmic immanence is always ready to exploit the slightest weakness" (Steps 493, Chaosmosis 75).

Even as the explicit connections among Bateson and Deleuze and Guattari attest to Bateson's ongoing vibrancy as a foundational theorist, there are other, less overt connections to be made in order to fulfill the commission that his work assigns his readers. Just as abduction demands abstractive leaps that ignore the fictive boundary between mind and nature, so can the same methodology allow the mapping of patterns which are implicitly suggestive rather than explicitly drawn. Shortly before his untimely death in 1995, Gilles Deleuze was contemplating a collaboration with a younger French philosopher and ethicist, one with whom he had entertained a long-standing academic and theoretical rivalry, Alain Badiou.[4] Much of Badiou's philosophy centers on the

emergence of a postmodern subject in the wake of a founding event, and on related questions of ethics and activism, an activism that is both politically and socially motivated. Read in conjunction with the patterned intersections between Bateson and Deleuze/Guattari, yet another set of patterns begins to emerge, drawn this time not from explicit reference but from certain repetitions and iterations that are seductively familiar. In his ongoing interest in both difference and in pattern, Bateson noted what he termed the *moiré phenomenon*, the possibility that one might "investigate an unfamiliar pattern by combining it with a known second pattern and inspecting the third pattern which they together generate" (Mind and Nature 74). Out of difference, pattern might yet emerge in those very iterations across apparently unconnected philosophies. To recursively consider those refrains and their potential application to contemporary issues of critical theory, environmental rhetoric, and ecosocial praxis, one must first locate those patterns that oscillate between Gregory Bateson and the radical intellectual gesturing of these contemporary French thinkers.

Gregory Bateson founds his notion of the cybernetic mind with an interrogation of difference, a discussion which is repeated in the work of Deleuze and Guattari and in that of Alain Badiou. Each of these authors would ultimately see difference as dispersing into a radically multiple consistency, a heterogeneous Same that is not sameness, a polysemic universal singularity. Each ultimately looks to a more diffuse ethos—the mind, the rhizome, the situation—as a more-than-temporal site of cybernetic fecundity, of desiring-production, of subject-inducing fidelity. To trace the intersections of their singular voices is to reveal the resonance of a multivocal and kaleidoscopic ecology of mind.

In his autobiographical reflection first published in 1940, G.H. Hardy wrote that "a mathematician, like a painter or a poet, is a maker of patterns" (84). It is not by coincidence that each of these radical thinkers, Bateson, Deleuze/Guattari, and Badiou, invokes mathematics as a semiotic language with which to navigate an infinite potentiality that can only be realized in the move from the individualized and culturally constructed One to the universally singular 1, to that which is both greater than and less than the linguistic signifier. Mathematician and cultural theorist Brian Rotman notes that formal mathematics is without "*indexical* expressions, those fundamental and universal elements of natural languages whereby such terms as 'I,' 'you,' 'here,' 'this,' as well as tensed verbs, tie the meaning of messages to the physical context of their utterance" (Ad Infinitum 7). Using mathematical notation allows these writers to avoid the limitations of denotative and connotative grammars, allowing their work to be more generative, more generic, and to foreground their concepts in a descriptive and relational context, rather than in one constricted by linguistic delimitation and overcoding.

It is Bateson who recognizes that "epistemology is always and inevitably *personal*," that the meaning which emerges in any relationship between things or persons or circumstances is constrained and constructed by the expressive vehicle used to map that relationship (Mind and Nature 82). Language produces only one side of any relationship; language, for Bateson, has a tendency to stabilize (and thus *to fix*) meaning...and therefore to overlay a temporal index onto a fluid construction, to locate a pattern while perhaps obscuring the fact of its mobility. Writing that "number is of the world of pattern, gestalt, and digital computation," he uses mathematics to illustrate

pattern, patterns of connection and comprehension and patterns of epistemological error (Mind and Nature 46).

Bateson emphasizes that there is a vast difference between "the *ordinal name* of the given odd number and its *cardinal* value," and in that difference we move to recognize that there is a vast difference between the linguistically fixed and subjectively isolatable One and the material and integral 1 (Mind and Nature 71). Deleuze and Guattari pursue much the same distinction in their notion of the numbered number (again, one, two, three) and the numbering number (1,2,3) which represents for them "the *countersignifying* semiotic…a numerical sign that is not produced by something outside the system of marking it institutes" (118). They combine number and language in a series of equations intended to deterritorialize familiar perceptions, to create ruptures in habitual thought processes, and to escape the limitations of the culturally bound and binding linguistic semiotic. Badiou goes even farther; "for Badiou, mathematics is ontology," and mathematics is therefore the most appropriate language for articulating his philosophy (Feltham and Clemens 10). Much of his work is couched in terms of equations and formulas, semiotic expressions of relationship and pattern that yield both connection and contradiction when considered alongside the work of Bateson and Deleuze and Guattari in plateaus of interaction within which minds become Mind.

Difference
(n -1) = Multiplicity
1:1 ≠ One

I suggest to you, now, that the word "idea," in its most elementary sense, is synonymous with "difference." Kant, in the *Critique of Judgment*—if I understand him correctly—asserts that the most elementary aesthetic act is the selection of a fact. He argues that in a piece of chalk there are an infinite number of potential facts…I suggest that Kant's statement can be modified to say that there is an infinite number of differences around

and within the piece of chalk...And within the piece of chalk, there is for every molecule an infinite number of differences between its location and the locations in which it *might* have been. Of this infinitude, we select a very limited number, which become information. In fact, what we mean by information—the elementary unit of information—is a *difference which makes a difference* (Gregory Bateson, Steps to an Ecology of Mind 459).

The diagonal frees itself, breaks or twists. The line no longer forms a contour, and instead passes *between* things, *between* points. It belongs to a smooth space. It draws a plane that has no more dimensions than that which crosses it; therefore the multiplicity it constitutes is no longer subordinated to the One, but takes on a consistency of its own (Deleuze and Guattari, A Thousand Plateaus 505).

[G]enuine thought should affirm the following principle: since differences are what there is, and since every truth is the coming-to-be of that which is not yet, so differences are then precisely what truths depose, or render insignificant. No light is shed on any concrete situation by the notion of the 'recognition of the other' (Alain Badiou, Ethics 27).

In one of several "Metalogues" with which he begins Steps to an Ecology of Mind, Gregory Bateson's interlocutory voice responds to the question "Why do things have outlines?" with a more provocative question, "Do you mean 'Why do we give things outlines when we draw them?' or do you mean that the things *have* outlines whether we draw them or not?" (Steps 27). His exploration of the notion of difference is interwoven with his interest in issues of pattern and symmetry. As his disciplinary affiliation moved through biology to anthropology and across psychology into cybernetics, he began to formulate a notion of difference as an operation in mental process, the predominant function in the conscious mind. In a 1954 paper Bateson suggests that the human mind relies on the imposition of difference in order to avoid the discomforts produced by abstraction (Steps 189). By 1969, he simply states that "a difference which makes a difference *is* an idea. It is a 'bit,' a unit of information" (Steps 272). Difference is descriptive and discriminatory; viewed as a process or a practice, it is the ability to segregate and to isolate, to categorize and to classify, to identify the

concrete elements or relata that are part of (or that are not part of) a system or set. The ability to make distinctions about levels of meaning is of a higher order of mental process than the ability to distinguish between this material thing and that material thing, between this object which I name "cat" and that object which I name "horse". For Bateson, the imposition of difference as a concrete delimiter of things is the first step in a progressive movement of learning that must ultimately exceed itself. Just as an idea is information of a difference, so a difference is itself only an idea. Difference is neither material nor measurable; it is rather the representation of a relationship.[5] Difference may be considered here not as a limitation, nor as *a set of attributes*, but as that irreducible and liminal space wherein meaning may be drawn, in the most literal fashion, by imposing outlines. Difference and Sameness are thus merely qualities that emerge on either side of the outlines themselves; they are effects of comparison, perspectives rather than quantities, and are thus mutable, volatile conventions of perception rather than essences of being. The communication of a difference (or as Bateson specifies, news of a difference that makes a difference) is information, an idea rather than a truth. If difference is the warp of mental process, then information is the weft, which moves over and under, through and between, the outlines that knowing produces. For Bateson, difference is the coin of the realm of mental process; if "mind is an aggregate of interacting parts or components," then the interaction between those parts that is the source of its coherence as mind is the perception of discontinuity (Mind and Nature 85). This perception of difference he thus defines as "an event, a step function," one that triggers or causes events or changes which induce the aggregation of minds in the forming of outlines, the drawing of distinctions. Unarticulated differences have no

materiality—"those distinctions that remain undrawn are *not*" (Mind and Nature 90). Like Kant, Bateson acknowledges that a plenitude of differences abounds in the ongoing context of our existence, but he is only interested (and *can* only be interested) in those differences which make a difference.[6]

Deleuze and Guattari focus on difference as convention, as a semantic paradox of description that arises out of a communicative necessity: "in order to designate something exactly, anexact expressions are utterly unavoidable. Not at all because it is a necessary step or because one can only advance by approximations…it is the exact passage of that which is under way" (20). Difference captured and reified as a negative thematic appears throughout A Thousand Plateaus as signification, as segmentation, as sedentarity, as a tracing, a boundary. Difference is a distraction, an artificial construct that can only be seen as nonproductive; it is a discrimination that will dissipate in the move to the rhizomatic middle, a vector that will "nullify endings and beginnings" (25). Difference reified, difference abstracted from its processual role at the intersection of signification and subjectivity becomes difference concretized as faciality, as the face, as singular identity, "the *white wall/black hole* system" (167). Focusing the gaze on difference leads to both the inward recognition of a separate self and the outward perception of the other; in either case, difference produces the starkly defined outlines that are descriptive/definitive of Cartesian duality, outlines that serve to imprison and to restrict. For Deleuze and Guattari, "the face is a politics," and difference is a manifestation of social power that reinscribes lines of hegemony rather than lines of flight (181). Segmentarity carves out the singular and produces lines that become impenetrable boundaries preventing the formation of multiplicities and the becoming-potential that is

not attainable in the homogeneity of the One. In that 'hole-ism" that results from the singularizing effect of difference, there is not plenitude but emptiness; identity predicated on difference is trapped in a pit of its own making.

For Badiou, difference is both fundamental and problematic; its invocation is the basis for most humanist ethics, and its reinscription through that discourse defeats his fundamental project wherein a truth-process can emerge. Recall that for Bateson, news of a difference constitutes information, which in the unconscious mind conveys something about relationships and serves to spark the integration of elements that coheres in the aggregate he calls a mind. Captured in language by the conscious mind, however, difference becomes something else. Consciousness "talks about things or persons," which quantifies and localizes difference as limitation (Steps 139). Badiou names not information but opinion as "the primary material of all *communication*," which in a like manner serves to circulate news of difference; while opinion also serves to consolidate humanity along the lines of differences that are constitutive of identities, it is "beneath the true and the false, precisely because its sole office is to be communicable" (Ethics 50-51). Identifying in contemporary ethics the continued colonization of the Other by an insistence upon a "right to difference" that presupposes (and therefore redoubles) an inferiority assumed in that alterity, Badiou proposes a radically alternative approach. Beginning with the assumption that "infinite alterity is quite simply *what there is*," Badiou proposes to found his ontology not in what *is*, "the infinite multiplicity of differences," but in the Same, in "what *comes to be*" (Ethics 25-27). Difference is not swept away—in a truth-process it is not recognized or *outlined*. Because difference is *a priori*, for all, it cannot function as a delimiting factor.[7] A truth, which is "*indifferent to*

differences," in its emergence through a truth-process, makes possible the advent of the Same (Ethics 27).

How might these very different notions of difference serve to inform or to problematize one another? Bateson emphasizes that an unacknowledged difference has no meaning; it produces no information and is consequently unrecognized. Mental process is characterized by some triggering event/change that, while initiated in news of a difference that makes a difference, is itself not the separation into identity but rather the coherence of mind, the aggregation or assemblage of multiple parts into some greater whole which is itself dynamic, cybernetic. Pattern is both connected and connecting, the expression of mind's aggregation and yet excessive, more-than the perceptions that recognize it. Difference/alterity/opinion resonates beneath and throughout an ecology of mind or an ontological situation; truth, which for Badiou signals the coming-to-be of the Same is only enabled by an event, a rupture...and how is that not comparable to Bateson's notion that news of difference enables the coming-to-be of a mind in the altered perception that can only be facilitated by a rupture in pattern:

> But the pattern may be changed or broken by addition, by repetition, by anything that will force you to a new perception of it, and these changes can never be predicted with absolute certainty because they have not yet happened. (Mind and Nature 26)

Badiou repeatedly addresses the idea of cultural differences and their limitations on the kinds of potential that truth-processes are intended to generate.[8] For Badiou, identity politics becomes an autopoietic limitation rather than an evental site for the emergence of a truth-process. In Saint Paul he writes that "neither can a truth procedure take root in the element of identity. For if it is true that every truth erupts as singular, its singularity is immediately universalizable. Universalizable singularity necessarily breaks

with identitarian singularity" (Saint Paul 11). Universalizable singularity can be restated as the numbering number 1,[9] while identarian singularity finds itself connotatively and denotatively outlined in the semiotic One, in the conceptual signified that reinscribes the Subject and the subjective. Badiou argues that the fragmentation of contemporary society is deliberately sustained by the marketplace:

> For each identification (the creation or cobbling together of identity) creates a figure that provides a material for its investment by the market. There is nothing more captive, so far as commercial investment is concerned, nothing more *amenable* to the invention of new figures of monetary homogeneity, than a community and its territory or territories. The semblance of a nonequivalence is required so that equivalence itself can constitute a process. What inexhaustible potential for mercantile investments in this upsurge—taking the form of communities demanding recognition and so-called cultural singularities—of women, homosexuals, the disabled, Arabs! And these infinite combinations of predictive traits, what a god-send! Black homosexuals, disabled Serbs, Catholic pedophiles, moderate Muslims, married priests, ecologist yuppies...Capital demands a permanent creation of subjective and territorial identities in order for its principle of movement to homogenize its space of action; identities, moreover, that never demand anything but the right to be exposed in the same way as others to the uniform prerogatives of the market (Ethics10-11).

The manipulation of difference as a means of maintaining and even producing new markets for capitalism is a cautionary note that Badiou revisits in his political philosophy. He finds equally dangerous the tendency for identitarian logic to go a step further, valorizing its own difference by positing "that this culture's constitutive elements are only fully comprehensible on the condition that one belong to the subset in question," a condition that by its nature prevents the evental appearance of a truth-process (Saint Paul 12).[10]

Consistency
And...And...And
Not All

The Same, in effect, is not what is (i.e. the infinite multiplicity of differences) but what *comes to be*. I have already named that in regard to which only the advent of the Same occurs: it is a *truth*. Only a truth is, as such, *indifferent to differences* (Alain Badiou, Ethics 27).

All the material of human multiplicity can be fashioned, linked, by a 'consistency' (Alain Badiou, Ethics 48).

Let us summarize the principle characteristics of a rhizome: unlike trees or their roots, the rhizome connects any point to any other point, and its traits are not necessarily linked to traits of the same nature...The rhizome is reducible neither to the One nor the multiple (Deleuze and Guattari, A Thousand Plateaus 21).

Nothing will enter memory, everything was on the line, between the lines, in the AND that made one *and* the other imperceptible, without disjunction or conjunction but only a line of flight forever in the process of being drawn, toward a new acceptance, the opposite of renunciation or resignation—a new happiness? (Deleuze and Guattari, A Thousand Plateaus 206-207).

What if "Truth" in some very large and, for us, overriding sense is information not about *what* we perceive (the green leaves, the stones, that voice, that face) but about the *process* of perception? (Gregory Bateson, Sacred Unity 227)

That is an elementary example of something which is at the roots of beauty and something which is at the roots of the sacred. It is at the roots of how the world tends to be a unified world and not a dualistic world (Gregory Bateson, A Sacred Unity 300)

Badiou identifies "three major dimensions of a truth-process," which he conceives of as the *event*, a rupture in ordinary process, a turn that is immanent in a specific situation and yet is not limited or bound by the conditions of that situation, the *fidelity*, which represents the vibratory emanation that is both the residue of the event and the infinite vector of process it generates, and the *truth*, "what the fidelity gathers together and produces," which in turn calls forth or produces an Immortal subject (Ethics 67-68). Truth is *new*, potent, generative; it is revealed by the event which ruptures the void of the situation, which punctuates the plenitude of knowledge that previously obscured this

universal singularity. Truth and the fidelity which gathers it induce a subject. A subject is "a local act of truth," a "point of truth" founded in material human bodies that participate in the composing of a subject, which is a consistency not limited to a single corporeal body—a subject may appear in a work of art, a scientific theory, a political movement, or in a pair of lovers (Infinite Thought 47, Ethics 44).[11] In this process of becoming-subject, "the 'some-one' thus caught up in what attests that he belongs to the truth-process as one of its foundation-points is simultaneously *himself*, nothing other than himself, a multiple singularity recognizable among all others, and *in excess of himself*, because the uncertain course...of fidelity *passes through him*" (Ethics 45). Critical to his argument is Badiou's insistence that the trajectory of a truth is both ongoing and consistent; truth is conceived not as the universal, total, or *essential* truth—there is no unified truth. Rather, the excess which emerges in a subject induced by truth is linked to the void from which it emerges; it is unknown and unchosen, not something which can be decided on between specific elements known a priori in a situation. It is this very not-known (and in a Batesonian way, unconscious) excess which gives consistency to the truth process; it is that which is universally singular, of the Same, which convokes its subject out of difference and into sameness and which forms itself around the potentiality present, yet until-now unrecognized, in the situation.

It is only in a becoming-truth that the advent or coming of the Same can occur. It is not the addition of one to one but rather an iterative conjunction, a multiplicity that is accomplished by becoming "like everybody else," the ability to paint oneself out of foreground and into the background. Difference is subsumed by the multiplicity. It is "the magic formula we all seek—PLURALISM = MONISM" (A Thousand Plateaus 20). For

Deleuze and Guattari, the nonlinear metaphor of the rhizome as a liminal space which "is always in the middle, between things, interbeing" suggests generative potential in a combinatory multiplicity; "the rhizome is the conjunction" (25). There is in this smooth space a consistency that is also constructed in difference yet indifferent to it; defined as haecceity, it is intensity yet not homogeneity, "a powerful nonorganic life that escapes the strata, cuts across assemblages, and draws an abstract line without contour" (507). Guattari would later note that "no existential approach has priority over another...Relationship to the other does not proceed through identification with a preexisting icon, inherent to each individual" (Chaosmosis 95). Implicit in Deleuze and Guattari's notion of this Same is that individuality is not eradicated in multiplicity; in conjunction, in haecceity, the individual is not lost but is intensified, becoming-excessive.

Bateson also longs to define as a kind of monism the ability to move from the dualism of the traditional mind/body distinction beyond the singular Self to the universal process or system he calls "Mind." This loss of singularity in a unifying nonlinearity is for Bateson the promise of the aesthetic of the sacred. He writes, "We have lost a wholeness of being which would include 'that' and the 'other' side together...The damage is the taking apart. The sacredness is the coming together" (Sacred Unity 301-302). Implicit in his cybernetic model of that systemic coming together is another name for the void, for that undifferentiated unnamed liminal space from which truth may emerge. "All that is not information, not redundancy, not form and not restraints—is noise, the only possible source of *new* patterns" (Steps 416). Like Badiou, Bateson recognizes that it is only from out of the void of the situation, the un-named un-counted alterity that is immanent in the chaotic heart of existence, that the truth may be gathered.

Only out of the coherence of singular aspects can a cybernetic mind engender a faithful subject, one co-evolved in relationship (organism-plus-environment) with its context, one initiated in the ruptural difference that news of a difference opens up.[12]

Frame | Context | Frame
Intensity = 0
{Ø}

But while the analogy of the mathematical set is perhaps over abstract, the analogy of the picture frame is excessively concrete. The psychological concept which we are trying to define is neither physical nor logical. Rather, the actual physical frame is, we believe, added by human beings to physical pictures because these human beings operate more easily in a universe in which some of their psychological characteristics are externalized (Gregory Bateson, Steps to an Ecology of Mind 187)

A BwO is made in such a way that it can be occupied, populated only by intensities. Only intensities pass and circulate. Still, the BwO is not a scene, a place, or even a support upon which something comes to pass. It has nothing to do with phantasy, there is nothing to interpret. The BwO causes intensities to pass; it produces and distributes them in a *spatium* that is itself intensive, lacking extension. It is not space, nor is it in space; it is matter that occupies space to a given degree—to the degree corresponding to the intensities produced. It is nonstratified, unformed, intense matter, the matrix of intensity, intensity = 0; but there is nothing negative about that zero, there are no negative or opposite intensities. Matter equals energy. Production of the real as an intensive magnitude starting at zero (Deleuze and Guattari, A Thousand Plateaus 153).

The concept of the situation is especially important, since I maintain that there can be no ethics in general, but only an ethic of singular truths, and thus an ethic relative to a particular situation. I now accept that a situation cannot be understood simply as a multiple [i.e. as a set]. We must also take into account the network of relations it sustains, which involves making sense of the way a multiple appears in the situation (Alain Badiou, Ethics lvi).

One of several themes that flow across and between the work of Bateson, of Deleuze and Guattari, and of Badiou, is a metaphoric use of set theory to convey notions of framing and context, boundaries and relationships. Bateson uses set theory as an abstract metaphor to complement the more concrete example of the picture frame, which he uses to demonstrate that frames of reference not only distinguish subject from

surroundings, figure from ground, but also that framing constitutes meaning, meaning which is contingent upon framing. Bateson's discourse, like his examples, is metacommunicative; his movement from anthropological observations of cultural interactions through homologous biological structures to an emphasis on the psychological interaction of the unconscious (primary process) with the conscious (secondary process) is always a process of double description. His intent is to move from a discussion of "*things which are related* "(Steps 153, emphasis added) to a consideration of the relationships which circulate among those relata, an continued movement away from a vision of singular bound sets rigidly discriminating between logical types towards an understanding of the progressive interaction between elements, which calls for the more mobile and fluid imaginary of set theory. Constrained by the logical limitations imposed by Russell's Theory of Logical Types, Bateson is yet drawn to the productive nature of mathematical set theory, recognizing that its imaginary and porous brackets offer an intriguing contrast to the rigid outlines imposed by psychological framing (Steps 186).[13]

The rigidity inherent in psychological framing supports Bateson's contention that classification is an arbitrary property of human consciousness, one that exemplifies a tendency to abhor abstraction and to prefer discrete difference. In his 1954 essay, "A Theory of Play and Fantasy," Bateson provocatively observes that the dreamer and the schizophrenic, both exemplars of primary process/unconscious thinking, are "unable to discriminate between 'some' and 'all,' and unable to discriminate between 'not all' and 'none' (Steps 184). The ability to make those distinctions is a product of the conscious mind, and Bateson comes to define that ability as "ego function," an ability to draw

distinct outlines that clearly foreground the 'some' within the background of the 'all' (Steps 205). In his later essays, Bateson's understanding of the progressive nature of a hierarchy of logical types and the need for some semiotic better designed to explore and to promote abstractive leaps between them suggests an epistemological move outward, beyond the isolating confines of discrete sets of things and towards a more immanent space that is indifferent to difference, towards the transcontextual inter-face that he proposes as the ecology of mind. Mind becomes, for Bateson, something like a universal set, an infinite array of interacting contextual subsets whose boundaries are merely fictive and within which truth can only be immanent.

Deleuze and Guattari also reference the human tendency to classify or to segment lived experience according to a variety of stratifying differences. Using mathematical notation to underscore their seminal metaphor of the Body without Organs, Deleuze and Guattari devote an entire plateau to the idea that a multiplicity cannot be constructed by the addition or multiplication of single elements; it is, instead, a subtractive movement, represented by the formula (n -1), which best articulates the smooth space of generative intensity characterized by the multiple, the undifferentiated, a void which is not-empty. Here, the mathematical semiotic 1 signifies not a unity but an isolate, not universal singularity but the discrete individual. To remove the singular is to *un*-delimit, to *de*-differentiate. The BwO is a field of pure immanence, a plateau or plane of consistency, a "movement of generalized deterritorialization in which each person takes and makes what she or he can, according to tastes she or he will have succeeded in abstracting from a Self" (157). The BwO is the set of not-One, and in the fullness of its conjunctive

potential, the AND...AND...AND suggests an exponential recombination, a multiplicity of relationships coming-to-be.

Badiou's use of set theory is paradigmatic. For Badiou, the situation, a circulating and repeating series of knowledges, constitutes a local address organized around a void, the null set, the uncounted which is yet present in the multiplicity of the situation. Enabled by the work of set theorist Paul Cohen to move beyond the limitations that Russell's theories imposed on Bateson's work,[14] Badiou is able to introduce the null set as the void present in the situation and as the source of the new, the immanent fount out of which the event can initiate the truth-process. Badiou's truth emerges in the situation as both singular and generic, universally singular, indifferent to difference, multiple rather than unified.

One of the criticisms leveled against Badiou by his translator, Peter Hallward, is that Badiou's use of mathematical set theory equates his concept of situation to that of a set, which "ensures that a situation is defined exclusively by what *belongs* to it (its elements, or members), without reference to the constituent *relations* that might exist among these elements," whereas Badiou's definition of the state creates permanent sets that are defined exclusively by relations (Translator's Introduction xxxii). Hallward's reading is that Badiou is oversimplifying his concept of the situation by failing to recognize the presence in any human situation/set of those biological and cultural relations that he describes as "universal structuring principles (biological, cognitive, linguistic...) on the one hand, or of certain 'specifying' attributes (based on culture, religion, class, gender...) on the other" ("Translator's Introduction" xxxii). The question of those relations is, for Badiou, one of recognizing the environment of the situation, if

you will. As he indicates in the "Preface to the English Edition," his thought is evolving towards recognizing those relations—but this does not suggest that he is embracing the limiting descriptors that Hallward advocates. Badiou is emphatic in his emphasis on the negative impact of recognizing either universal or specific delimiters that would advance the cause of cultural or identitarian classification. For Badiou, set theory is "a subtractive ontology: it speaks of beings without reference to their attributes or their identity," an assumption that echoes Bateson's perception of sets as constellations of relationships *between things* rather than as collections *of* things and which correlates to Deleuze and Guattari's formula of (n – 1) (Feltham and Clemens 17).[15] Badiou is adamant that truth admits no exclusion and cannot be founded in it, a fundamental he elaborates in Saint Paul: The Foundation of Universalism. While a truth-process is the effect of an event that occurs within a concrete and real situation, it is not subject to the conditions or limitations inherent in that situation; those relations of difference that Hallward would privilege simply do not adhere to the emerging truth of the event for Badiou:

> When one reads Paul, one is stupefied by the paucity of traces left in his prose by the era, genres, and circumstances. There is in this prose, under the imperative of the event, something solid and timeless, something that, precisely because it is a question of orienting a thought toward the universal *in its suddenly emerging singularity*, but independently of all anecdote, is intelligible to us without having to resort to cumbersome historical mediations. (Saint Paul 36)

What Badiou is projecting is that a situation has its own context, its own internal relations between its members, which must be revisited in order to determine not the differences but the patterns; it is the information that difference yields that allows us to locate the larger patterns that emerge within and among the multiples that arise. Bateson

returns throughout his lectures and essays to the idea of difference, to the information that it conveys and to the contexts within which it functions. In his 1977 Afterword to About Bateson, he argues that "a difference is not material and cannot be localized....To locate difference, i.e., to delimit the context or interface, would be to posit a world incapable of change" (240).

For both Badiou and for Bateson, the paramount quality of the situation/set/context is its potential, not its limit. Bateson reminds us, "It is the *context* which evolves" (Steps 155). Badiou's concept of the void set as existential (that-which-is) and as immanent within every situation/set/context (and yet as retaining an un-named and therefore un-counted and unlabeled property—see *indiscernible* in Infinite Thought 24), offers an opportunity for a new discourse on environments and ecosystems. Beyond identifying a collection of interacting beings, we can begin to appreciate an ecosystem as a set structured or defined by its *be-ing*, a local relationship with its own immanent truth and potential for subject-generation. Place-based sensibilities, long the province of nature writers and memoirists, take on a new dimension—biophilia emerges not as an attribute or trait but as fidelity to a truth-process which is heralded by some evental counting-for-one. Such a set defies humanistic or anthropocentric definition or delineation; it is instead what Guattari imagines as "an incorporeal ecosystem, whose being is not guaranteed from the outside" (Chaosmosis 94).

Mind
rhizome↔rhizome
$\chi \in \beta$

It seems that rigid focusing upon any single set of relata destroys for the artist the more profound significance of the work. If the picture were *only* about sex or *only* about social organization, it would be trivial. It is nontrivial or profound precisely because it is about sex and social organization and cremation, and other things. In a word, it is only about

relationship and not about *any* identifiable relata (Gregory Bateson, Steps to an Ecology of Mind 151).

But if mind is immanent not only in those pathways of information which are located inside the body but also in external pathways, then death takes on a different aspect. The individual nexus of pathways which I call "me" is no longer so precious because that nexus is only part of a larger mind (Gregory Bateson, Steps to an Ecology of Mind 471).

If human beings have a destiny, it is rather to escape the face, to dismantle the face and facializations, to become imperceptible, to become clandestine, not by returning to animality, nor even by returning to the head, but by quite spiritual and special becomings-animal, by strange true becomings that get past the wall and get out of the black holes...(Deleuze and Guattari, A Thousand Plateaus 171).

One might also put it like this: how will I continue *to think*? That is, to maintain *in* the singular time of my multiple-being, and with the sole material resources of this being, the Immortal that a truth brings into being through me in the composition of a subject (Alain Badiou, Ethics 50).

The whole point is that differences be traversed, conserved and deposed simultaneously, somewhere other than in the frozen waters of selfish calculation (Alain Badiou, Ethics 113).

For Gregory Bateson, pattern is the essence of theory, relationship is the operating principle that governs the ontology of the material world, and the mind is the expression of interacting multiplicities across material bodies and beyond temporal and physical boundaries. His efforts to revisit and to rethink these truths as they manifest themselves in social and environmental issues can be traced to several events: the publication of Darwin's Origin of Species, the ratification of the Treaty of Versailles, and the deployment of nuclear weapons by the United States in World War II. In his introduction to Steps to an Ecology of Mind, Bateson indicates his realization that his body of work is an effort to propose a new science, one that does not exist; one that would elaborate on his studies of a variety of pathologies in one area of knowledge or another and which would call forth a new recognition of a phenomenon immanent within them and yet not previously counted. Bateson names this metacontext "the ecology of mind," and he

proposes that "the mental world—the mind—the world of information processing—is not limited by skin" (Steps 460). By linking mind and environment, he expands Darwin's focus on the single organism as the unit of survival, recombining elements of the human, the other-than-human, the social, cultural, and the biological to envision a situation which "expands mind outwards...and...reduce[s] the scope of the conscious self" (Steps 467). By moving beyond the finite and the concrete, Bateson also redefines survival, noting that "the contents of the skin are randomized at death and the pathways within the skin are randomized. But the ideas, under further transformation, may go on out in the world in books or works of art" (Steps 467). This ongoing vectoring of the ecology of mind is the infinite path of truth, along which Bateson recognizes himself as a nomad, a wanderer, a set of ideas who is simultaneously unified in himself, bound with others whose ideas flow through him, and randomizable, dispersive, to be conjoined with a larger flow in a more universal trajectory. What he also valorizes in this new thinking is the hope that a certain humility might be introduced into the relationship between man and the environment; he cautions that "we are not outside the ecology for which we plan—we are always and inevitably a part of it" (Steps 512).

Deleuze and Guattari invoke not the mind but the rhizome as the metacontext within which difference falls away and multiplicity emerges. Disdaining the linear and the causal, refusing both the beginning and the end, Deleuze and Guattari find movement and potential in the middle, in the undifferentiated liminality of the *between*. The rhizome, like the ecology of mind, is connective and conjunctive. It is made up of multiple BwOs, each of which is made up of multiple plateaus. Its linkages are vital and organic, not linguistic and semantic, and multiple becomings all move towards dispersion

into the multiple: "flows of intensity, their fluids, their fibers, their continuums and conjunctions of affects, the wind, fine segmentation, microperceptions, have replaced the world of the subject. Becomings, becomings-animal, becomings-molecular, have replaced history, individual or general" (162).

For Badiou, the situation is the metacontext for the truth-process, the presentation of multiplicity which arranges itself around the void. The event interrupts the accepted knowledge of the situation, a rupture that reveals a new truth that emerges into the situation and proceeds into the world as a truth-process. The singular aspect of a truth is derived from its emergence out of a situation, a related series of elements related not by concrete qualities but rather, as he describes it, by the operation of the situation itself. "Every faithful truth-process is an entirely invented immanent break with the situation" (Ethics 44). Rachel Carson's Silent Spring, first published in 1962, was an event which ruptured the Western world's consciousness of human-natural interaction. Driven by an instrumental capitalism which saw the natural world as a wellspring of extractable value, there was before 1962 no environmental movement per se. Silent Spring "happened" to that stratum of consciousness, allowing the missing sounds of birdsong, eradicated by overuse of pesticides to extract record agricultural crops while decimating native avian species, to be "counted-as-one," initiating a new perspective which could not be undone in a space where it had not been and yet could only be. Among the subjects induced by this truth which is consequentially coming-to-be are the contemporary environmental movement and a variety of political actions forwarding green issues.

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Sometimes if both people are willing to listen carefully, it is possible to do more than exchange greetings and good wishes. Even to do more than exchange information. The two people may even find out something which neither of them knew before. (Gregory Bateson, Steps to an Ecology of Mind 12)

Don't be one or multiple, be multiplicities! (Deleuze and Guattari, A Thousand Plateaus 24)

'Keep going!' Continue to be this 'some-one', a human animal among others, which nevertheless finds itself *seized* and *displaced* by the evental process of a truth. Continue to be the active part of that subject of a truth that you have happened to become. (Alain Badiou, Ethics 91)

In Part I of Steps to an Ecology of Mind, Gregory Bateson reprinted seven metalogues, fictive conversations which interrogate a thematic subject. As Bateson describes a metalogue, it should ideally replicate in its structure the same discursive order that the problem under discussion demands. In "Why Do Frenchman?" the problem under discussion has to do with the differences between gesture and language, with how different things are communicated in different ways, and with the surprising suggestion that what is NOT said may perhaps be as important as what is (Steps 11). Gregory Bateson has suggested that his ideas might survive his physical death and continue to evolve within the cybernetic mind he theorized. Many of his concepts have indeed survived him, taken up and elaborated upon, adapted and recombined, or revealed by silence, present in their absence, in texts by a multiplicity of authors, among them the Frenchmen Gilles Deleuze, Félix Guattari, and Alain Badiou. What does their critical gesturing, their eloquent waving, suggest about the survival of ideas and about the process of selection that moves some ideas into our active, daily conversation, and submerges others under layers of assumption, buried under the rubble of habitual

acceptance? If abduction reminds us that patterns of ideas may be mapped across time and space, across cultures and disciplines, then recursiveness commissions us to revisit our assumptions and to question the survival of some of our oldest ideas. In his first book, Bateson wryly observes that during his long tenure as a professor, an annual rumor would begin to circulate among his students that "There's something behind what Bateson says, but he never says what it is" (Steps xxv). When asked for a draft of what he would like to say in a theoretical last lecture, he wrote, "What is form, pattern, purpose, organization, and so on...? Those were my questions when I started, and are still my questions" (Sacred Unity 307). It is the continuing fidelity to those and many other questions that induce the subject of truth that is Bateson AND Deleuze AND Guattari AND Badiou. What emerges between them may not be answers, but there is surely meaning. When a Frenchman waves his arms, a multiplicity resonates in the cybernetic mind.

Notes

[1] Conley offers an in-depth study of the history of post-structuralist environmental thought in France, grounded in the structuralism of Claude Lévi-Strauss and progressing through Michel Serres, Prigogine and Stengers, Deleuze and Guattari, de Certeau, Cixous and Irigary. With a notable feminist emphasis, her discussions of the development of ecological consciousness among the *soixante-huitards* give enthusiastic and perceptive summaries of French theorists, while providing an unfortunately one-dimensional discussion of Gregory Bateson's work. Conley's summation of Bateson is drawn entirely from Steps to an Ecology of Mind and so fails to appreciate the evolving nuance of his thought, and her connection of Bateson to Guattari cites only the overt references, not the more subtle connections between them. Her first two chapters offer provocative arguments against the new eco-right neoliberalism of Luc Ferry and an interesting oppositional take on Jean Baudrillard's "techno-liberalism."

[2] The persistence of certain organic images across the text that is Bateson+Deleuze+Guattari is itself worthy of a more focused treatment than is warranted in this context. Bateson uses an image of a tree and the symmetry between its branches above ground to its roots below as an example of systems and circuits; Deleuze and Guattari coin the phrase "arborescence" to describe the linear descent of language systems, a filial descent they will discard in favor of the radically unpredictable and nonlinear rhizome. Bateson celebrates the co-evolution of grasses, and notes that like a weed, epistemological error will propagate itself throughout a system. Bateson argues symmetry using examples drawn from lobsters and orchids, and both appear in metaphoric guise in Deleuze and Guattari. Even figures as disparate as wolves and ticks recur in both texts, demonstrating not only pattern between but also the creativity and mutability of natural imagery in linguistic contexts.

[3] Guattari notes that he has coined the term "transversality" to stand for his interest not in limiting himself to a single area of study or focus but rather to "consider the unconscious elements that secretly animate sometimes very heterogeneous specialties" (Chaosophy 8). His use of the term implies something like Bateson's notion of *abduction*, and the ability to recognize patterns that extend across seemingly disparate systems also informs Guattari's theories of *schizoanalysis*.

[4] Of his lost opportunity to collaborate with Deleuze, Badiou wrote disconsolately of this "amitié conflictuelle qui, en un certain sens, n'a jamais eu lieu" in his book, Deleuze, la clameur de l'être (qtd. in a review by Philippe Barbé, published in the February 1999 issue of The French Review, p.580).

[5] In his 1967 essay "Cybernetic Explanation," Bateson provides a lengthy and provocative discussion of difference, contrast, symmetry, correspondence, and other relational terms which he re-terms as "variables of zero dimensions" which are "of zero dimensions and, therefore, are not to be located". The mathematical formulation that he resorts to in order to posit the nonquantifiable and therefore nonlocatable nature of difference has resonance for Deleuze and Guattari's stipulation that the BwO "is not space, nor is it in a space." See Steps to an Ecology of Mind, pp 414-415, and A Thousand Plateaus, p. 153.

[6] In Ad Infinitum, Brian Rotman also extends Bateson's insistence on hierarchies or levels of difference as evidence of the kinds of metacommunication presupposed in his critique of the foundational assumptions inherent in Euclidean mathematics. This will be further examined in Part III.

[7] Recall too Bateson's explanation that meaning can exist only between things; the universe can have no meaning, since it is assumed to be all that there is—there can be no other thing between which it and the universe can propose meaning. For Badiou, alterity is not a part-word.

[8] Guattari is also concerned that a re-emergence of an emphasis on sectarian subjectivity rather than a diffusion of difference in the consistency of the multiplicity will adversely affect the ecological movement, particularly in the wake of the first Gulf War and the attendant surge of neo-liberalism. See Chaosmosis, "The Ecosophic Object" and his discussion of the return of nationalism and racism.

[9] Badiou's use of the singular 1 stresses neither an originary first person nor even the primacy of an ordinal; the universality of 1 is in its equality, in its uniformity of being that admits no fractional identity.

[10] The cautionary note here for the contemporary environmental movement cannot be overlooked. Too often, identarian difference becomes the rallying point for an isolating and concretizing identity politics that suffocates its own potential within self-drawn boundary lines that exclude creative and collaborative opportunities for praxis. I am indebted to Nicholas Russell for pointing me towards Joan Scott's essay, "The Evidence of Experience," which clearly notes the consequences of an overly claustrophobic commitment to an overcoded singularity rooted solely in difference.

[11] In this sense, Badiou's subject is like Bateson's cybernetic Mind: not bounded by skin.

[12] In Chaosmosis, Guattari notes that "Nothing happens of itself. Everything has to continually begin again from zero, at the point of chaosmic emergence," naming the productive potential of the void, of the cybernetic chaos that noise represents (94). And note too that in Chaosophy, he makes a very similar move. He writes that "I believe that concrete situations always confront us with this kind of moral ambiguity...It has nothing to do with the question 'Where are you speaking from?'...but rather 'What is it that begins to speak through you in a given situation or context?'" (42). Moving from an indexical query to one that interrogates process, Guattari echoes Badiou's notion that an already located subject does not initiate or enunciate a truth; rather, a subject is locally convoked by a situational truth-process and emerges in fidelity to it. Badiou's theories of the subject, to be further explicated in his forthcoming (and as yet unavailable in English translation) Logiques du Monde, represent one of his most radical departures from postmodern thought. See Feltham and Clemens' excellent Introduction to Infinite Thought for a brief but useful explanation (2-7).

[13] And not coincidentally, Badiou states that "the real terrain for the examination of the relation between psychoanalysis and philosophy is found first of all in mathematics" (Infinite Thought 67).

[14] Russell's paradox recognizes that there can be no set which is the set of all sets which are not members of themselves, a contradiction which would seem to eliminate the possibility for the emergence of new, and previously not "counted," truths. Bateson's positioning of "noise" as the potential source for new information anticipates Badiou's introduction of the null set, a concept linked to Cohen's theory of the generic set.

[15] Translators Oliver Feltham and Justin Clemens offer an immensely helpful and clear history of the development of set theory in their Introduction to Infinite Thought. They also explicate Badiou's use of set theory as outlined in his L'Etre et l'événement. They note that the significance of Badiou's claims is not that he initiates his philosophy *within* the domain of set theory, but rather that he identifies set theory *as* ontology. His focus is not on how we know (epistemology) nor on what we know OR on what we are, but on being qua being.

PART III: THE CHARM AND THE TERROR

In the inaugural essay of the premiere issue of the journal Environmental Communication, scholar Robert Cox proposes that environmental communication ought to define itself as a *crisis discipline*; he further argues that the consequence of this self-reflexive move is to reveal a concomitant demand for the acknowledgement of an *obligatory* ethical duty. Drawing on arguments circulating within the emerging field of conservation biology, Cox extends Michael Soulé's assertion that "*ethical norms* are a genuine part of conservation biology, as they are in all…crisis-oriented disciplines" to support his own examination of the purpose of the discipline of environmental communication, to define that purpose within a context of both urgency and uncertainty, framed by crisis, and to impose on the practitioners and proponents of environmental communication "a distinctly *ethical* duty" (6-7). Just as Soulé identifies both functional and ethical premises for conservation biology, so Cox conflates the terms "crisis discipline" and "ethical duty," premising his argument on the assertion that "the hallmark of practicing a crisis discipline is the need to make decisions or recommendations with imperfect knowledge," and suggesting that the functional postulates of a discipline also serve as the originary "basis for the ethical norms for intervention or recommendations for managing natural systems" (8). Identifying four basic tenets of the field of environmental communication, fundamental meanings or *values* that he sees constructed in the tensions between functional and ethical valences, Cox articulates crisis as nascent

in the communicative pathologies that characterize alternative framings of environmental events or issues by ideologically "interested" parties (12-13). Cox suggests that these principles are not simply the constructive underpinnings of a disciplinary practice—he also re-positions these tenets as value-laden normative commitments, as the raw material which both constructs and mandates an environmental communication ethic. In another articulation, Cox's norms marry crisis reaction/response to democratic process, and suggest a heuristic ethic that would encourage opportunities for transparent communicative interaction that does not privilege a specific ethical orientation (biocentric versus anthropocentric, for example) and which would encourage all parties affected by environmental issues to participate in the decision-making process (15). He concludes by advocating for environmental communication scholars to speak out publicly when "the results of their scholarship point to danger," and to thereby provide critical evaluation of discursive practices which might otherwise be "constrained or suborned for harmful or unsustainable policies toward human communities and the natural world" (16). Thus for Cox, defining environmental communication as a crisis discipline implies a purposive and ethical duty to facilitate response to crisis—to actively make recommendations for solutions and to enable community decision makers to react *appropriately* to "signals of environmental stress," even in circumstances where systemic knowledge is imperfect or incomplete (18).

How might such a proposal resonate within the cybernetic mind that is Gregory Bateson AND Deleuze Guattari AND Alain Badiou? How would the conjunction of a crisis discipline and an obligatory ethical response be problematized by each of these theorists? Certainly, the idea of a looming ecological crisis, predicated on an urgent need

to reevaluate human interaction with the biological world would not be unfamiliar to any of these theorists. Bateson frequently expressed concern that human response to a widening spiral of environmental degradation linked to human action was perhaps already delinquent. In 1970, he wrote that "I do not know how long we have...Nobody knows how long we have, under the present system, before some disaster strikes us, more serious than the destruction of any group of nations" (Steps 468). Félix Guattari, writing in The Three Ecologies in 1989, expressed concern that if we continue on our present path, "we can unfortunately predict the rise of all kinds of danger: racism, religious fanaticism, nationalitary schisms that suddenly flip into reactionary closure" (35). As recently as 1998, Badiou cautioned that the political visibility of environmentalists will be vitiated as capitalist corporations reductively remodel them as new market targets (Ethics 106). However, not one of these writers chooses to advocate a crisis-machine as constitutive of some over-arching ethic. Much of their individual rhetoric is concerned with communicative pathologies and with identifying the dangers implicit in the failure to recognize hegemonic ideologies as they reconstruct themselves in various discourses. Each of these contemporary critical thinkers mandates the continued need for problematizing the ongoing dialogue in the world, for challenging the discursive formations that underlie interactions in the world-that-is. Badiou goes so far as to radically critique the humanist ethic that underpins much of contemporary social activism. To fully engage Cox's argument and to potentially rearticulate it, it is necessary to feed it back through the critical systems of Bateson, Deleuze and Guattari, and Badiou in order to recursively test its validity and its weaknesses.

Both Gregory Bateson and Alain Badiou identify within the contemporary situation the potential for truth and for its distortion or its co-optation. In Part V of Steps to an Ecology of Mind (*Epistemology and Ecology*), Bateson warns repeatedly against the unanticipated effects of short-term and purposive thinking, the kinds of technologically-assisted decisions that can lead to ecological crises. He argues that knowledge frequently utilized becomes reified through the process of habit formation, efficiently freeing up conscious mental processes to deal with new ideas, while those which are repeatedly used become sedimented and instinctual. The danger that this poses for epistemological health is twofold.

First, such ideas are no longer subjected to rigorous critical inspection, but become foundational to other knowledge. Those un-conscious ideas, accepted and subsequently unexamined, continue to affect day-to-day actions but are no longer consciously perceived as being in play. Bateson observes:

> What is unique from context to context is gong to have to be dealt with; what is general from context to context can be handed over to what for a moment we will call 'habit'....We then get the rather curious phenomenon that the reasonably lazy mind will economize by sinking the more abstract characteristics of situations to essentially lower levels which are in general less conscious. (Sacred Unity 169)

In therapy, it is precisely those buried, un-conscious, habitual responses that a psychologist labors to restructure; in critical theory, it is those unchallenged fundamental (and generally politically and discursively dominant) ideologies which the theorist seeks to reexamine.

Second, Bateson likens the process of habit formation to that of evolutionary adaptation. As behavioral and physiological changes become hard-wired into the gene

code, flexibility of adaptation is diminished. Bateson refers to this process as one which "sometimes works to create evolutionary culs-de-sac," and his meaning should be applied not only to human-environmental interaction, but also to contemporary environmental discourse as well (Steps 502-510). He points out:

> The moment you have these habit-forming characteristics, which are not confined to individual organisms—ecosystems do it, cities do it—you have what the computer people called 'hard programming': a certain characteristic of the behavior of the system is so deeply built into the system that it affects almost everything the system does, and nothing short of very violent change will change that deep programming. (Sacred Unity 170)

In Bateson's lexicon, the evolution of an idea from a relatively flexible somatic change to the fixity of a hard-wired genetic change conserves the relatively limited portion of the human mind available for conscious decision making, but it also constrains mental flexibility and occludes critical inspection. The result is an over-reliance on purposive thinking that operates on long-held but under-examined foundations.

Purposive thinking, in Bateson's view, is one of the primary causes of environmental degradation in the contemporary era:

> Today the purposes of consciousness are implemented by more and more effective machinery, transportation systems, airplanes, weaponry, medicine, pesticides, and so forth. Conscious purpose is now empowered to upset the balances of the body, of society, and of the biological world around us. A pathology—a loss of balance—is threatened. (Steps 440)

Critically, he defines purpose as a short-cut, a self-interested response to any circumstance, any communication; purposive thinking is linear rather than circuitous, and it fails to perceive the residual consequences of its intervention in a systemic context. Bateson was increasingly aware that our tendency to allow purposive consciousness to dictate our choice of action and reaction was eliminating flexibility, which he defined as

"*uncommitted potentiality for change*" (Steps 505). Defining our situation in terms of a crisis would impose a short-term temporality on that situation and would increase the likelihood of the kinds of responses that Bateson considered pathological, the "eating up of flexibility in response to stresses of one sort or another" (Steps 505).

This is precisely the kind of response that philosopher Andrew McLaughlin identified as "reactive environmentalism," a crisis response that focuses on the speedy rectification of identifiable problems as they manifest themselves, without regard to either the social circumstances that contribute to them or to the long-term consequences of that intervention (125-132). Drawing on language that is grounded in Bateson's emphasis on systemic wisdom and patterns-which-connect, McLaughlin notes that reactive environmentalism "assumes that management of problems is possible, which leads to calls for technological innovation, more research, and more legislation and regulation by the state" (132). What is implicit in his critique is the notion that the solution implicit in addressing an environmental symptom as an emergent crisis draws on the tools that are ready to hand...the same tools used to construct the crisis situation to begin with. Robert Cox's argument, while recognizing that dominant discourses are constructive of environmental perceptions, does not sufficiently address the limitations that a crisis management approach will impose upon an environmental or communicative situation. Even more perplexing, any crisis-machine includes in its assumptions the notion that there is a solution to every problem, that there is always another chance to right what has gone wrong, and that reframing a context is sufficient to renew potentiality, even when the conceptual and discursive tools that generate that framing remain the same.

The idea of a crisis-machine as the discursive framing device of the kind Cox is deploying is a notion whose origins may be traced to Deleuze and Guattari's A Thousand Plateaus. It emerges at the juncture between their conception of machine/machinic and the order-word. They note that "there are no individual statements, only statement-producing machinic assemblages" and that "assemblages have elements…of several kinds: human, social, and technical machines" (36). These productive and constitutive assemblages of enunciation and ideology exemplify Bateson's notion of recursivity, of the viral circulation of ideas in any cybernetic mind, and reiterate McLaughlin's point that the tools we choose to solve the problems we delineate are embedded in the very contexts within which those problems arise. The crisis-machine that identifies and defines an environmental problem as such, and which specifies what may or may not be an *appropriate* response, is the same crisis-machine which also defines and delineates (and in so doing, delimits) the solutions to that problem. The crisis-machine produces; it manufactures both the crises it proposes and the solutions it proffers. It does so proscriptively and prescriptively through the use of order-words, "the variable of enunciation that effectuates the condition of possibility of language" (Deleuze and Guattari 106). The force of an order-word lies in its concreteness; by over-determining a situation through its framing via a crisis-machine, our potential for creative response is reduced to a simple binary choice for or against the stated ethic. Order-words untangle the alternatives in a given situation and both simplify and speed response; the converse of this perspective, however, is that they also limit choices and foreclose creativity.

There is also the danger here that a crisis-machine will lead to the promotion of a singular and dominant voice or viewpoint, unchallenged by a mind habitually conditioned

to choose rather than to critique. In decrying the crisis modality, Bateson points out that "the terrible thing about such situations is that inevitably they shorten the time span of all planning. Emergency is present or only just around the corner; and long-term wisdom must therefore be sacrificed to expediency, even though there is a dim awareness that expediency will never give a long-term solution" (Steps 442). Guattari proposes his ecosophical perspective as an alternative to the blind acceptance of "reductionist, stereotypical order-words which only expropriate other more singular problematics and lead to the promotion of charismatic leaders" (Three Ecologies 34). In a similar vein, Badiou is also concerned with the subversion of the truth-process when it is returned to the situation to effect a linear and conscious forcing of new knowledges:

> Only today can we fully assess what this return means: it is that of Galilean physics back towards technical machinery, or of atomic theory back towards bombs and nuclear power plants. The return of disinterested-interest towards brute interest, the forcing of knowledges by a few truths. At the end of which the human animal has become the absolute master of his environment. (Ethics 59)

In order for truth to become, to be universally singular yet not totalizing, it must be the product not of determinism but of chance. True potential (or in Bateson's terms, flexibility) exists only when there can be multiple outcomes, multiple actions. Badiou locates Evil in the very process of the emergence of Good—in the truth-process itself. Evil exists in the same moment as Good; just as the excess of the subject which induces the Immortal[1] arises out of an utterly disinterested interest (the Good), so the choice to pursue self-interest, the inducement of purposive thinking to prioritize subjective goals and personal gains, allows the induction of Evil. Badiou is adamant—"it is absolutely essential that Evil be a possible dimension of truths" (Ethics 60). Just as truth interrupts

the plenitude of the situation and introduces out of the void that which is new, so Evil seizes on the plenitude and denies the void, denies the potentiality of that which has not yet been counted-as-one and reduces the universal to the singular in a move that is both extractive and exploitative.

Just as Bateson recognizes the potential for harm that denying those other perspectives, those other voices, that Other silenced in the situation yet always present in the void ("We are learning by bitter experience that the organism which destroys its environment destroys itself" Steps 491), Badiou is equally cognizant that it is "for the human animal as such, absorbed in the pursuit of his interests" that "a truth [is] absent" (Ethics 61). Fidelity demands an unstructured and structuring faithfulness to the emerging truth, not a purposive and linear pursuit of specific interests. Borrowing from Spinoza, Badiou suggests that "if we define interest as 'perseverance in being' (which is, remember, simply to belong to situations of multiplicity...) then we can see that ethical consistency manifests itself as *disinterested interest*" (Ethics 48-49). Perseverance in being means perseverance in difference; the movement towards universal singularity is a movement out of our insistence on alterity and into a sameness that would belie an obligatory ethic that is predicated on a definitional (and therefore differential) disciplinarity.

Robert Cox is not only concerned with identifying the functional and ethical tenets that define environmental communication; his stated aim is also to discover a disciplinary purpose, to solidify a disciplinary identity that is still in flux. Badiou, particularly, is concerned with the dangers of identity politics and the consequences of clinging too firmly to that perseverance in being that can be an obdurate adherence to

difference. In an interview with his translator, Peter Hallward, Badiou points out that to valorize a cultural difference is simply to self-limit; to define oneself as 'black' or as 'an environmentalist' or as 'an environmental communicator' is to construct an identity based on some externally identified factor or quality and then to reinscribe that difference in a more reified manner (Hallward 107-109). Both Gregory Bateson and the collaborative team of Deleuze/Guattari describe a similar phenomenon by referencing Jakob Von Uexküll's 1934 study of animal affects and his notion of the *Umwelt*, exemplified in the lifeworld of a tick.[2] Deleuze refers to this in his collaborative effort with Claire Parnet and again in more elaborate detail in A Thousand Plateaus. Von Uexküll's work focuses on the affective qualities of animals as a means of more adequately describing a species, rather than relying on more obvious physical or species/genus characteristics. A tick's ethos or niche is wholly contained in terms of three affects: it is attracted to light, it is sensitive to smell, and it sustains itself by means of its ability to penetrate the skin of a host. For Deleuze, this ethological enumeration of affective qualities supplants physical/identarian description as productive of an Ethics: that "we know nothing about a body until we know what it can do, in other words, what its affects are, how they can or cannot enter into composition with other affects, with the affects of another body" (A Thousand Plateaus 257).[3] Rephrasing their arguments in the language of Cox's essay, Bateson, Deleuze, and Badiou would place the emphasis on what environmental communication *does* rather than on what it *is*, moving away from focusing on terms of *distinction* and towards terms of *process*. In this sense, each moves away from the conscious and purposive dangers inherent in identity politics and in nominal definitions and towards a more radical understanding of a truth that is organic

rather than normative. As Bateson so eloquently observed, "What if 'Truth' in some very large, and for us, overriding sense is information not about *what* we perceive…but about the *process* of perception?" (Sacred Unity 227).

In further defining the environmental niche that an *Umwelt* represents, cognitive philosopher Andy Clark notes that Von Uexküll is describing "*effective environments*. The effective environment is defined by the parameters that matter to an animal with a specific lifestyle….It is a natural and challenging extension to wonder whether the humanly perceived world is similarly biased and constrained" (25). This is the question which Bateson, Deleuze and Guattari, and Badiou are considering when they problematize the kinds of definitional certainties that a crisis-machine tends to generate. The recognition that environmental communication operates within parameters which are socially dictated (and thus potentially both biased and constraining) is reflected in Cox's basic functional tenets, and his ethical restatement further notes the need for transparency in the expression of those parameters, coupled with the conceptually vague assumption that there is an inherent good in those conditions which promote such expression. Like Cox, both Bateson and Badiou recognize a need for constant critical reevaluation of the rhetoric that moves along and through the trajectory of a truth-process. On more than one occasion, Bateson recalls the words of a Japanese Zen Master that "*to become accustomed to anything is a terrible thing*" (Steps 511). In Bateson's terms, recursivity forces us to reevaluate the validity of our habitual assumptions, while abductive reasoning moves us to think beyond the constraints of a single situation by emphasizing recurring patterns through metaphoric investigation. Badiou stresses that "if a truth is never communicable as such, it nevertheless implies, at a distance from itself, powerful

reshapings of the forms and referents of communication" (Ethics 70). Truth cannot be restricted by special interests or by identarian boundaries; in order to maintain epistemological and biological flexibility, we must engage in critical inspection as a methodology for preventing the reification of truth-process into Truth as a bound and finite set, whose constituents are fixed and unchanging. Ethics, like meaning, can function only if it is perceived as process, as emerging in relationship rather than either as the beginning or as the end of some series of actions or commitments, as immanent within a situation rather than as an external bracket that defines it and operates upon it. Fundamentally, our most basic notions about alterity and sameness, about the One and the 1, and about the finite and infinite boundaries of the ecology of mind must be challenged if we are to pursue the faithfulness to a truth-procedure that Badiou advocates and that Cox intends.

In Ad Infinitum: The Ghost in Turing's Machine, mathematician and cultural theorist Brian Rotman proposes to examine Euclidean assumptions about number and mathematical operations in order to problematize the fundamental underpinnings of those assumptions. His questions revolve around our traditional notions of infinity, and he asks whether a perpetual and limitless repetition of a series of operations (the unending series of additions indicated by the symbolic ellipse "...") is either possible or practicable. Rotman identifies in mathematics both a Code (the formal language of mathematics, the rules, ideograms, operations and other rigorously applied dictum which a disembodied and non-indexical Subject employs in the conduct of mathematics) and a metaCode (the informal and imaginative linguistic intuition and explication of the Code utilized by the flesh and blood Person who communicates the stories that underpin the formal

computations) (Ad Infinitum 69-70). Arguing that the concept of infinity relies on the presumptive action of a disembodied third actor, a ghostly Agent who can perform an endless set of repeated iterations not realizable either by the idealized Subject or the finite Person, Rotman raises questions about transcendent assumptions that have material consequences for traditional mathematics—and that can be extended to the foundational principles that underlie the operation of the crisis-machine. As Rotman points out, embodied in "the *ad infinitum* principle [is] the principle of always-one-more-time," an axiomatic guarantee that one can always "ask one more question, carry out one more stage of a procedure…take another single step forward, count yet again an item" (Ad Infinitum 51). The infinite intimates an ever-receding future always-already-waiting along an unwavering vector of progress—there is no closure implicit in infinity. Against this bountiful iterative infinity (mathematically represented as 0, 1, 2, 3…), Rotman proposes a non-Euclidean arithmetic which begins by assuming a finite Agent, one-who-counts who is constrained by the physical limitations of the material universe within which s/he counts, a finite Agent that is, who is actively constrained by the answer to the Spinozan question, "What can a body do?" From the assumption of that corporeal and finite agent, it is then necessary to "disallow a counting process that was not performable *within a given level of resource*—for example, within the time-span of an individual life or by using only so much paper or time or storage facility" (Ad Infinitum 53, emphasis added). Semiotically, Rotman imposes the recognition of that limitation, of that finitude, with the notation 0, 1, 2, 3…$, where the $ represents that limit or point beyond which iteration is not physically realizable (and by extension, beyond which no more pollution can be released into the atmosphere, no more oil-coal-gas can be extracted). Critically, he

notes that until the limit is reached, our perception of the integers is unchanged—within this range, the numbers themselves behave just as they did in the traditional Euclidean perception. In other words, traditional Euclidean axioms hold true *locally*, within a range or situation that has some finite limit (a mathematical *Umwelt*, an effective environment affectively defined and practicably true); what Rotman is interrogating is the all-too-frequent assumption that what is locally true is also universally valid...that what holds immanently within an identifiable situation can be transcendently assumed for all (Ad Infinitum 117-121).

Rotman goes on to develop the notion of a series of limitations or exit points that emerge as one attempts to identify the finite ranges of a progression of mathematical operations in a global context. Moving from addition to multiplication to exponentiation to hyperexponentiation, he demonstrates that "an essential feature of the realizable iterates...is the way their global structure emerges as the result of a reflective or zigzag movement" (Ad Infinitum 129). The picture that emerges is suggestive of Bateson's discussion in Mind and Nature about the interplay between form and process, between calibration and feedback (Mind and Nature 177-189). Bateson intends his ladder-like diagram to illustrate the necessary interaction of rigor and imagination, of strict and loose thinking, not to advocate what is so often dismissed as relativism but rather to suggest the need for recursiveness as an epistemological operation that raises the same questions about assuming global warranties from local verities. Each movement up or down the ladder represents a step or a range or a situation or a set...a set that has as its limit some exit point beyond which meaning begins to dissipate, a point where what is locally true cannot be presumed to be globally universal.[4] In Steps to an Ecology of Mind, Bateson

suggested that there is an ecology of bad ideas in the cybernetic mind as well as one of right thinking, bad ideas whose pervasive and viral character will proliferate like weeds if undetected and unchecked (Steps 492). Recursiveness recognizes not only that choices made at some level inform and infuse those decisions which are made at successive levels—recursiveness also demands that foundational ideas must be periodically re-examined, re-engaged to test their viability and vitality—to evaluate their fitness for survival. In Western thought, assumptions about Euclidean infinity feed a crisis-machine which manifestly assumes its infinite ability to progressively remediate the successive consequences of its own decisions.[5] Those same assumptions also allow for the presence of a transcendent and ghostly Agent who can objectively determine such value-laden notions as "appropriate response" and on whom the "obligation to enhance the ability of society to respond appropriately to environmental signals" rests (Cox 5). What specifically might those environmental signals represent...and what dangers exist for those who respond to the crisis-machine's injunctions to act or to re-act responsively? To restate Robert Cox's concluding question, "What would 'crisis' scholarship and education look like for scholars, teachers, and practitioners in environmental communication" or in any other discipline which considers itself a crisis discipline?

We need only look to Gregory Bateson for a question which counters Cox's query as follows, "I ask then what is it—what sort of habit of mind is it—that leads to paying too much attention to symptoms and too little to system?" (Sacred Unity 296). In an article written in 1978, near the end of his life, Bateson raised the issue of what he called "*symptomophobia*," a social trend that responded to symptoms not as indicators of underlying systemic problems that warranted careful examination, but as problems, as

pathologies themselves which must be "fixed." Occidental culture has become afraid of symptoms, so much so that our response is indeed that dictated by the crisis-machine. Critically, Bateson notes that our reaction is often to respond to the symptom in such a way that we inadvertently enable the underlying pathology:

> We treat the symptoms—we make more roads for...more cars, and we make more and faster cars for the restless people...We even look into the future and try to see the symptoms and discomforts coming. We predict the jamming of traffic on the highways and invite bids for government contracts to enlarge the roads for cars that do not yet exist. In this way, millions of dollars get committed to the hypotheses of future increase in pathology. (Sacred Unity 296)

He notes that "in biology there are no values which have the characteristic that if something is good, then more of that something will be better," a point that seems to reflect Rotman's position that beyond certain limits, an infinite expansion of anything is not materially defensible. Bateson draws on his earlier work as a psychologist to draw parallels between his studies of alcoholism and addictive behavior to present-day interactions with the environment. The focus of his 1971 essay, "The Cybernetics of 'Self': A Theory of Alcoholism," is on the Occidental tendency to conflate the notion of the self with some transcendent and autonomous power, the Cartesian Mind which is located in and yet in control of the physical Body. In this essay, Bateson carefully deconstructs the philosophies of Alcoholics Anonymous using the tenets of cybernetics to relocate Mind as an immanent and cybernetic system and to diffuse the notion of some external Power; instead, he conflates the aesthetic recognition of systemic holism with the revolutionary re-orientation experienced by the alcoholic "hitting bottom" (Steps 331-332). It is only when the individual organism perceives its own integrity within the context of the larger system that true health can be restored; the piecemeal treatment of

symptoms will only extend pathology. What is vital is the recognition that "the unit of survival—either in ethics or in evolution—is not the organism or the species but the largest system or 'power' within which the creature lives. If the creature destroys its environment, it destroys itself" (Steps 332).

Michel Foucault writes that while power circulates, "there is no such entity as power, with or without a capital letter; global, massive, or diffused; concentrated or distributed. Power exists only as exercised by some on others, only when it is put into action" (340). Gregory Bateson was equally distrustful of what he deemed the "myth of power," the belief that there is an equivalent to the force or energy that exists in the world of physics that can be translated as an equally autonomous and causative *power* in the cybernetic systems of individuals, social constructions, and environmental systems. Unfortunately, as he observes, it is an enduring and powerful myth, one that "probably most people in this world more or less believe in....It is a myth which, if everybody believes in it, becomes to that extent self-validating. But it is still epistemological lunacy and leads inevitably to various sorts of disaster" (Steps 494-495).

It is this hint of an exercise of an autonomous power, one that can isolate and address the errors of a system in runaway mode, one that assumes that the external input of an outside perspective can successfully target and repair the symptoms of a pathological disturbance that Cox's notion of "appropriate response" seems to recommend. Bateson would respond assertively that to add input from outside any ecological or social or individual system would more likely serve to further the assumptions of our technocratic and democratic age, which privilege solution and technical know-how with too little regard for the systemic consequences of such *ad hoc*

and mono-perspectival actions. Always cognizant of the recursive nature of man's interaction with (and many instances, interference with) the circuitous contexts of the environment which defines his existence and his survival in concert with its own, Bateson stressed that "the problem of how to transmit our ecological reasoning to those whom we wish to influence in what seems to us to be an ecologically 'good' direction is itself an ecological problem. We are not outside the ecology for which we plan—we are always and inevitably a part of it" (Steps 512). The nature of cybernetic systems is such that feedback not only stimulates response in an environment but then itself becomes a vital element in that environment and a recipient of the response to its response. In his Bateson-inspired study of cybernetics as a key methodology in defining and modeling new approaches to the treatment of pathologies emergent in family dynamics, Bradford Keeney also references the caveats of acting too purposively or externally on a self-correcting system. Distinguishing between first and second order cybernetics, Keeney follows Bateson in suggesting that to focus treatment on the alleviation of a symptom is to identify a part of a system and to assume that it is fully exemplary of the whole system, a first-order approach to both cybernetics and to treatment. Higher orders of cybernetics demand that partial solutions be acknowledged as such, potentially useful in some short-term situation, but often counter-productive and even dangerous when introduced into what is only a portion of a much more complex whole. He goes on to caution:

> Therapists, therefore, need to ask whether the therapeutic social systems that dispense solutions and cures perpetuate problems. Therapists are usually not accustomed to thinking beyond immediate pragmatic outcomes. Likewise, researchers typically focus on whether the presenting problem was solved or, at best, what the success of the solution was…All of these inquiries examine the effects of the therapist's intervention within simple cybernetic process. The effects within higher orders of cybernetic

> process are usually not approached. It is no trivial matter to ignore higher order cybernetics. (121)

Bateson's characterization of the same process of well-intended yet *ad hoc* intervention is more abrupt: "It is of no use to plead that a particular sin of pollution or exploitation was only a little one or that it was unintentional or that it was committed with the best intentions. Or that 'If I didn't, somebody else would have.' The processes of ecology are not mocked" (Steps 512).

In their provocative essay, "The Death of Environmentalism," originally presented in the October 2004 meeting of the Environmental Grantmakers Association, authors Michael Shellenberger and Ted Nordhaus offer a passionate argument against the traditional methods employed by the environmental movement to advocate legislative remedies for environmental problems. Despite its provocative title, the essay is not a call for the end of the environmental movement; rather, the authors contend that environmentalists need to redefine their issues and to refocus their collective vision in order to escape the "literal sclerosis" (9) currently undermining their efforts.

Shellenberger and Nordhaus interviewed over 25 members of the environmental community involved in decision-making, funding, and policy development to arrive at their conclusions about the movement as a whole and to determine why the community has failed to produce meaningful legislation in the face of the global warming crisis facing the world today. Pointing to a failure on the part of the environmental community to lead with vision, they introduce a theme that they repeat throughout the essay: that environmentalism's "narrow definition of its self-interest leads to a kind of policy literalism that undermines its power" (4). Shellenberger and Nordhaus believe that the environmental movement has largely defined the "environment" as a nonhuman, separate

entity, deserving of preservation and protection, but which has a very specific set of "environmental problems" which ought to be the proper concern of environmentalists. Noting that "the three-part strategic framework for environmental policy-making hasn't changed in 40 years," they use examples from the history of environmental legislative proposals to illustrate a familiar pattern that begins by identifying and defining an environmental problem, proposing a technical solution, and communicating both problem and solution to legislators in some traditional and accepted manner (lobbying, public relations, etc.) (6). Repeatedly, the essay points to the failure of environmentalists to voice a solution that connects the core concerns of a much wider audience with a vision for the future that offers benefits instead of technical remedies. Phrases like "disaster preparedness is not an environmental problem"(10), "safety 'is not an environmental issue'" (29), and "health care is not an environmental issue" (15) underscore the authors' contention that it is with such narrow definitions that environmentalists have distanced themselves from the concerns and priorities of an increasingly conservative American electorate, and that they are failing to look for larger solutions and for opportunities to build alliances with other groups (like labor and civil rights organizations).

It is that same type of literal sclerosis that plagues Robert Cox's attempts to define environmental communication as a discipline and to elaborate for it an overarching and comprehensive ethic that would both guide and structure its utilization. In a provocative essay entitled "Philosophy and the 'death of communism,'" Alain Badiou asks, "Will the evocation of death allow us to find an appropriate way of naming what we have witnessed?" (Infinite Thought 95). Does calling for the death of environmentalism provide a means for its definition, predicated upon its relegation from present tense to

past activity? Or is it more likely that somewhere in the progression from a political *moving* into the linguistic concretism of a *movement*, from the fluid activism of a verb form into the stasis of a nominative category, somewhere in this transition death has already occurred? What happens to the practice (and therefore to the praxis) of environmentalists' communicating their perseverance-in-doing when it is translated into a disciplinary perseverance-in-being?

In one of his earliest reflections on his anthropological methodology, Gregory Bateson shares a charming tale. Describing an oral examination in which he found himself compelled to answer a question for which he was ill-prepared, he constructed an abstraction to refer to a comparison between two entities that was neither inductive nor deductive; in fact, the maneuver he describes is perhaps his first foray into the abductive process of reasoning he would later espouse. He describes collaterally how this abstractive thinking requires the coinage of terminology to name or describe the abstraction he is proposing. He writes that:

> When I am faced with a vague concept and feel that the time is not yet ripe to bring that concept into strict expression, I coin some loose expression for referring to this concept…these brief Anglo-Saxon terms have for me a definite feeling-tone which reminds me all the time that the concepts behind them are vague and await analysis. It is a trick like tying a knot in a handkerchief—but has the advantage that it still permits me, if I may so express it, to go on using the handkerchief for other purposes. I can go on using the vague concept in the valuable process of loose thinking—still continually reminded that my thoughts are loose. (Steps 83-84)

Bateson goes on to propose that loose thinking, while conducive to creativity, can only be part of any epistemology; what must also be present is a strict thinking that never loses sight of the fact that the loose expression is merely a representation of an abstraction. The abstraction is not a power or a fact, but rather an idea, a "bit" of information, a difference

that makes a difference. Its meaning can only be discerned as it emerges in that liminal space within contexts and between other ideas; it is a map rather than a territory, and it ought not to be misread as inclusive of all that it conveys. The danger inherent in defining (rather than in attempting to describe) environmental communication or environmentalism or capitalism or communism is that we tend to accept the term as a finite and permanent container for a meaning that is deemed to be complete and static. In the act of definition we foreclose; in Bateson's own words, "When you narrow down your epistemology and act on the premise 'What interests me is me, or my organization, or my species,' you chop off consideration of other loops of the loop structure" (Steps 492).

Shellenberger and Nordhaus are not calling for an end to the environmental movement; they hope to motivate it to redirect itself so as to end the policy literalism that has so reduced its effectiveness. They offer the pointed observation that "the problem, of course, isn't just that environmentalism has become a special interest. The problem is that all liberal politics have become special interests" (22-23). Badiou would concur, and in fact his emphasis on disinterested-interest and the lack of purposive special interest in any valid truth-process is implicit in Shellenberger and Nordhaus' call for a reinvigoration of the environmental movement that abandons its formulaic response to symptoms in favor of a more open-ended and rhizomatic fluidity. Badiou writes that "all resistance is a rupture with what is. And every rupture begins, for those engaged in it, through a rupture with oneself" (Metapolitics 7). In order for environmental communication to open itself to the production of truth through the convocation of faithful subjects by an event, it cannot seek to limit or to define either its purpose or its

ethic. No discipline, no political movement, no epistemology can afford either to view itself only in part, in isolation, or to assume that symptomatic response at the local level will provide an equally sanguine global solution to a systemic problem. Global ethics are imposed in a doomed effort to provide transcendent and linear solutions to immanent local problems. Environmental communication is not obligated by an ethic nor is it empowered to prescribe one; environmental communication is an abstraction, a knot in a handkerchief, a description-machine embedded in a situation, faithful to its ruptural event and structured by and structuring of the continuation of a truth-process. Robert Cox would do well to resist his own impulse to categorize, to name and frame the discipline of environmental communication in terms of the crisis-machine, and to overdetermine the nature and purpose of its content and its ethic. He should rather heed the advice of Gregory Bateson to scientists in search of specific answers to purposive questions:

> [T]rain them to tie knots in their handkerchiefs whenever they leave some matter unformulated—to be willing to leave the matter so for years, but still leave a warning sign in the very terminology they use, such that these terms will forever stand, not as fences hiding the unknown from future investigators, but rather as signposts which read: "UNEXPLAINED BEYOND THIS POINT." (Steps 87).

Notes

[1] Recall that Badiou's subject is convened or induced by an on-going fidelity to a truth, a truth which emerges out of an event. An event is a rupture in a situation, both immanent within it and yet not constrained by the circumstances of that situation; it is more-than and yet always-already-there. In many respects, this rupture, which causes the counting-as-one something previously uncounted or unacknowledged, is the creative interruption of the void/noise that persists in difference and that yields the same, the pattern, the one. To actively challenge habitual knowledge, to cause to be re-examined an idea that has been long buried could cause such a rupture. For Badiou, the gathering of a subject ultimately produces the Immortal, that which exceeds the human subjects who find themselves convoked by fidelity and Subjects to a truth.

[2] I am particularly indebted to Andy Clark's investigation of cognitive science, Being There, for identifying and clarifying Von Uexküll's work. While Bateson does not identify its source, Deleuze does...but in far less detail than Clark's lucent description.

[3] Bateson utilizes the Von Uexküll example in Mind and Nature, but he uses the notion of *Umwelt* to support his own arguments about context and its importance, and indeed its necessity, for communicative effectiveness. He is particularly interested in how *zero* communication can in fact be pivotal, and his comments here and elsewhere in Steps to an Ecology of Mind resonate nicely with Brian Rotman's treatise on zero, Signifying Nothing. For the text of Bateson's discussion of the contextual *Umwelt* of the tick, see p. 43. Deleuze, as noted in the text of this paper, makes a far more useful (for my purposes) argument regarding the intersection of *Umwelt* and ethics. His first mention of this occurs in dialogue with Claire Parnet in their 1977 conversations published as Dialogues II. See pp. 60-62 for his elaboration of *Umwelt* and its connection to Spinoza's question, "*What can a body do*?"—a question which nicely ties his thought here to Badiou's use of Spinoza's notion of perseverance in being.

[4] Deleuze and Guattari describe this point of departure as a line of flight, a point of departure away from planes of organization, of stratification and classification, to a plane of consistency, a plane defined by not individuality but by haecceity, the Same, the smooth space of the plateau, the Body without Organs. See especially pp. 265-272 in A Thousand Plateaus. For Deleuze and Guattari, this is the point of immanence and of the emergence of truth process. It is a plane whose "basic chain of expression" is that of *indefinite article + proper name + infinitive verb*, a semiotic freed of normative and relative constraints. The indefinite article suggests that what exists is both immanent to the situation and constructed by it: to speak of *an* ethic rather than to propose *the* ethic recognizes that a universal normative signifier is not possible; Sameness arises from within its effective environment and is neither obligatory nor extensive beyond or outside it. Proper name does not name an individual subject: it "fundamentally designates something that is of the order of the event, of becoming, or of the haecceity." It relates to the rupture that Badiou identifies as gathering or convoking a subject, yet still immanent within while not constrained by the situation. Finally, the infinitive verb—always semiotically suggestive of process rather than of form, of what a body is "to do" rather than of what it has done. Beyond the point of departure, outside the local *Umwelt*, we can know no-thing; we can only posit an ongoing process whose dimensions and limitations are not materially within the province of our physical bodies.

[5] That machinic processes are not mechanistic must be inserted at this point. Guattari adapted Maturana and Varela's notion of the autopoietic machine as descriptive of a living system; he extended their emphasis on the "auto-reproductive capacity of a structure or ecosystem" beyond biological systems to social, cognitive, and behavioral systems as well. Any system can be characterized as machinic, which implies not a metronomic and robotic alternation between variable thresholds, but a productive and generative dynamic oscillation between form and process. In Chaosmosis, Guattari fully elaborates his concept of the machine, unconsciously (perhaps) reiterating Bateson's zigzag illustration when he asserts that "the machine, every species of machine, is always at the junction of the finite and infinite, at this point of negotiation between complexity and chaos" (111). A machine, unlike a mechanism, is not set in motion by some external and transcendent Maker to infinitely reproduce an identical iteration. Machinism is characterized not by

repetition but by process, and it is both productive and reproductive. Much of Deleuze and Guattari's emphasis in A Thousand Plateaus is on the war machine and its affects; it is from that concept that the notion of a crisis-machine gains its resonance. Every political and intellectual movement can thus be envisioned as a machine, just as can any multiply enunciated assemblage or ecosystem.

CONCLUSION: SO WHAT?

In 2004, author Terry Tempest Williams expressed her vision for a new program offering a master's degree in environmental humanities at the University of Utah. University officials described the intent of the program as designed "to bring the perspectives of such disciplines as communications, English, history, linguistics, and philosophy to bear on the kinds of environmental issues that have divided communities across the country" (Scully B15). Williams suggested that such an inter- and intra-disciplinary program might "create an ethic of place…which can lead to a cultural healing" specifically in its home state of Utah, long the scene of cultural, ideological, and environmental clashes between persons of different ethnicity, different faiths, and different land ethics (Scully B15). In 1979, seriously ill with the cancer that would ultimately bring about his death in 1980, Gregory Bateson responded to a request to deliver what he would deem to be his "last lecture" with an essay which he began by quoting the following lines from T.S. Eliot: "The end of all our exploring will be to arrive where we started and know the place for the first time" (Sacred Unity 307). In many respects, Gregory Bateson can be thought of as the first environmental humanities graduate…a multidisciplinary scholar whose interests ranged from the natural sciences to the social sciences, from mathematics to communication, from psychological systems to cybernetics. He was interested in how human beings communicated and how that linguistic, digital structure contrasted with the physically embodied and analogous

communication between a variety of mammalian species. He examined pathologies of communication, of schizophrenia, and of consumption, of alcoholism, and he made leaps of abstractive and abductive connection to seek out the illusive patterns that connect one seemingly disparate object of study to another. He was by turns an educator and a provocateur, always challenging himself and his audience to think again, to be more specific, and to problematize and to question, always returning to the place where he began to initiate another round of investigation.

In his Introduction to Mind and Nature, series editor Alfonso Montuori writes that "Bateson was engaged in what … we might now call transdisciplinary work, whose nature it is not merely to cross disciplinary boundaries, but to rearrange our mental landscape—to make us see the ecology of ideas and the ecology of mind—to make us see anew" (xviii). Gregory Bateson worked to make us "see," not in the traditional sense with which we each survey and passively accept the images which our brains transmit to our conscious mind, but in a more radical and truly aware sense. Always fascinated with the visual experiments of Adelbert Ames, Jr., Bateson often asked his listeners to respond with a show of hands if they agreed that they could *see* him. To the resulting sea of upraised hands, he would explain that vision is actually a process; the images which we think we "see" are actually the products of an elaborate and unconscious process whereby various bits of information, information about differences, are collated by the brain and relayed by it as sensory information (Mind and Nature 29, Steps 486-488). Critically for Bateson, our willingness to accept the products of process while remaining generally unaware of the process which produces them characterizes much of our interaction with our environment. Elaborating on this phenomenon in Mind and Nature, he proposes that

"image formation is perhaps a convenient or economical method of passing information across some sort of *interface*," a suggestion that relates both to his theories of cybernetic mind and to any attempt to locate or to see what an environmental humanities discipline might look like (Mind and Nature 34). Bearing in mind the caveats revealed in Part III of this thesis with regard to the attempt to overdetermine a disciplinary definition that might foreclose creative potential, how might environmental humanities serve as an interface between place and ethic, between nature and culture, between human and humankind?

In another of his favorite metaphors, Bateson would urge his students to observe their hands and to re-envision each one not as a palm with five distinctly different and functional digits but rather as a collection of relationships, as "a pattern of the interlocking of relationships which were the determinants of its growth" (Sacred Unity 310). How might such a re-imagining recast the notion of environmental humanities not as a collection of independent and separately functioning disciplines but rather as a collection of relationships, as the product of relationship rather than as a set of discrete differences only causally or occasionally connected? How then does the cybernetic Mind that is Gregory Bateson AND Gilles Deleuze AND Félix Guattari AND Alain Badiou emerge not as a bouquet of unusual and exotic blossoms, held in place momentarily for some purposive effect, but rather as one interactive and reproductive system, rhizomatically linked not in some ordered and artificial hierarchy but in a far more organic felicity? Bateson elaborates:

> Perhaps a curriculum is like a hand in that every piece and component of what they would call a curriculum is really related ideally to the other components as fingers are related to each other and to the whole hand…I am not against the learning of lists. I am against the failure to assimilate the components of lists together

> into a total vision, a total hearing, a total kinesics, perhaps, of the wholes with which we deal. (Sacred Unity 311)

It is the totality of vision that is striking here and that is instructive for environmental humanities (and for environmental communication, which is surely one of the "fingers" of this particular hand). Gregory Bateson saw in the patterns of his own life the greater patterns of systemic wisdom and of epistemological pathology that plague the contemporary biosphere. As his daughter Mary Catherine Bateson wrote in her 1999 Introduction to Steps to an Ecology of Mind, "by giving a portion of his own intellectual autobiography, two or three key moments of patterning recognized, he endeavored to lead readers along the paths to his own conclusions" (x). His fear of "the monstrous atomistic pathology" that spreads virally from individual mind to cybernetic Mind, from obsessive self-interest to strident identity politics, from parochial paranoia to nationalistic isolationism, is reiterated again and again throughout the course of his body of work. Rodney Donaldson writes that "if, as Bateson asserts, all we can know is difference, then it becomes at least plausible that the bulk of our personal, interpersonal, international, and ecological problems arise ultimately from the simple turning of a distinction into a separation, and the separation into an opposition" (xvi). As we have already read, Badiou stresses that alterity is what is—that to exist is to exist in difference, and that self-reflection is "by no means the intuition of a unity but a labyrinth of differentiations" (Ethics 25-26). The multiplicity that is environmental humanities has the potential to provide a liminal space for the coming-to-be of the Same. In the dynamic interface between those poles of difference, between those perseverances-in-being that cling to the rigidity of a self that is both individual and individuating, lies the domain of a situation. In the rupture of an event, in the cleaving of that atomistic self from its self-absorption,

lies the possibility of the emergence of a truth, one that is, as Badiou insists, "*the same for all*" (Ethics 27).

That the conjunctive synthesis that obtains between the work of Gregory Bateson and Deleuze and Guattari is more evident than the abductive leap that locates his thought in that of Alain Badiou is undeniable, yet the patterns are still present to those who wish to see them. In Badiou's emphasis on the radical nature of the impact of the truth-event on its evolving subjects, and in his concept of fidelity as a process, as "a sustained investigation of the situation, under the imperative of the event itself," I am attracted to the parallels between his thought and that of Gregory Bateson (Ethics 67). In many respects, I believe that Bateson's life and work was an ongoing exercise of fidelity to a truth-process that only began to be evident to him in his later years. Like Badiou, he identified the areas of science, love, politics, and art as potent sets within which subjects called by a truth-process might emerge, and he also longed to see a dissipation of the discursive and cognitive outlines that delineate the self into the coming to be of a unity not unlike Badiou's universal singularity. His recognition of that plateau of continuing yet non-escalating intensity that characterized Balinese personal interaction, and that was so fruitful for Deleuze and Guattari's Body without Organs, resonates in Badiou's description of the ethic of truths as "the principle of consistency of a fidelity to a fidelity," a processual consistency Badiou epitomized with the maxim "Keep going!" (Ethics 67). Perhaps even more provocatively, Bateson writes convincingly on art's metaphoric potential as an interface between the conscious and the unconscious, and as a productive space within which a more holistic praxis might be generated as a human audience is led to reconnect with the aesthetic patterning that characterizes our systemic

integration in the larger cybernetic mind. Bateson argues that "art is a part of man's quest for grace," a space which can only be attained if "the reasons of the heart" are "integrated with the reasons of reason" (Steps 129). Badiou takes up this same theme in both Saint Paul and in interview with Peter Hallward in the Appendix to Ethics, discussing what he calls "laicized grace." In the Appendix, he clarifies that "what I call laicized grace describes the fact that, in so far as we are given a chance of truth, a chance of being a little bit more than living individuals, pursuing our ordinary interests, this chance is always given to us through an event" (Ethics 123). It is in the event, in the work of art, in the interface that environmental humanities can provide, that we have the advent of a truth, the becoming-subject, the abductive leap that carries us out of our singular selves and into the plenitude of the Real, into the fullness of the multiplicity, into the power of the cybernetic Mind that seems to be me and yet is so much more than I can be.

Badiou suggests that "a philosophy is also a personal experience," and goes on to suggest that in the events of May 1968, so seminal in the lives of a generation of French thinkers, that "I was personally marked by this irruption" (Hallward, Appendix 124). This sense that something happened is fundamental to Badiou's discussions of the kind of rupture that denotes an event, the kind of rupture that propels a truth procedure and that fuels the convoking of a subject of that truth process. In the fall of 2006, my own particular event occurred. Reading Steps to an Ecology of Mind for the first time, something happened—I was personally marked by the experience. Recall that in Badiou's philosophy, an event reveals the existence of that which was not previously counted; in the rupture that shatters the status quo of the situation, that which was not previously heard is now present, and it is the fidelity to that experience that induces the

emergence of a new vision, a new perspective which allows the subject to see in a new way. It is a fidelity which demands both recursiveness and abduction—fidelity, like vision, is a process. Like meaning, it continually emerges in the middle, between what is and what comes to be. Gregory Bateson's injunction to his readers is that "the ideas which seemed to be me can also become immanent in you. May they survive—if true" (Steps 471). My goal is to remain faithful to his immanence.

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